PACIFIC SEABIRD GROUP

BULLETIN

Vol.6 WINTER 1979 No.2

SHOUT
SHARE
IT

Crested and Least Auklets
by Bob Hines

WHATEVER HAPPENED TO THE IDEA OF A SYMPOSIUM ON WATERFOWL
IN THE MARINE ENVIRONMENT ????

PACIFIC SEABIRD GROUP

BULLETIN

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MEMBERS OF PSG EXECUTIVE COUNCIL ..... INSIDE BACK COVER

From the Editor

This issue features the 6th Annual Meeting. Participants seem to generally agree it was the best yet. We have an interesting letter from Dr. T.R. Birkhead of the Seabird Group relative to publications. Election of Officers was deferred but a new Bulletin Editor was selected. The new Editor beginning with the next issue will be Joe Strauch, 7892 Greenbrier Circle, Boulder, Colorado 80301.

Secretary Paul Springer advises he is still having costly trouble with membership address changes. He writes, "We have to pay 25¢ for each notice of change of address we receive when it comes to us from the mail carrier, as well as pay the extra costs of sending a new copy of the Bulletin at book rate rather than the much cheaper bulk mail rate. The mail carrier destroys the Bulletin since he is not supposed to forward it on bulk mail service." So please get any address changes to the Treasurer as soon as possible.

Paul also notes that, "...some of the copies of the last issue of the Bulletin were poorly cut. If anyone is dissatisfied, they can write Betty Anne for a replacement copy."

We are indebted to Tony DeGange, James Welsh and Paula Walkup for illustrations for this issue. We are also using some line drawings of seabirds by Bob Hines, U.S. Fish & Wildlife Service staff artist. These are from an introductory pamphlet that comes with six lovely color prints made from paintings done by Hines on a 1978 trip to Alaska. They are available for sale($5.00 I think) by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402--stock No. 024-010-00530-1(Wildlife Portrait Series No. 4, A Host of Seabirds - Alaska, reproduction of paintings by Bob Hines).

Our thanks to Linda Dresch for her excellent composing and typing for this issue.

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As this is my last effort as Bulletin Editor, I thought it would be beneficial to share with the membership some of the lessons I have learned:

1. We have what I believe is a good system now wherein the Editor gathers material, puts it together and transmits it in camera-ready form to the Secretary for printing. The Secretary should not need to proof-read the material although Paul Springer has been very helpful in this regard. It is the Treasurer's duty to supply current address labels to the Secretary in time for mailing. The Secretary then supervises printing, manages the mailing permit, places the mailing labels and sorts the Bulletins according to bulk mailing specifications from the Post Office. Formerly the Editor handled all of this but it made a formidable job for one person.
2. Some material comes to the Editor spontaneously but the quality of the Bulletin will always depend on the ability of the Editor to coax or otherwise stimulate the membership into providing articles, reviews,

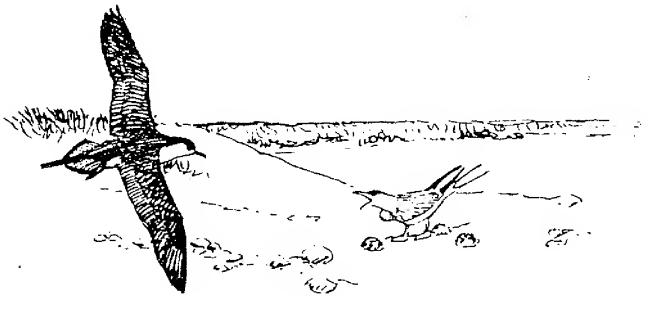
reports, letters and proposals for action. It should be a required duty of the Executive Council members to help with this. My experience has been that only about 25 percent of requests result in something printed. This statistic should not be used as a measure of membership interest because my requests have not always been reasonable or possible. It is presented as a measure of effort required of the Editor in gathering material. The Editor should not be expected to provide articles or reviews himself unless he wishes. The Editor should not be expected to rewrite material submitted in poor form. Typing is always a problem. Original manuscripts that are single spaced, have good margins(1.5 inches all around) and are clean and dark can be used without the effort to retype and reproofread. This is a great help. Contributors should look at past issues of the Bulletin to plan a format that will fit. Photo copies generally are not usable.

3. Currently we do two issues a year, one called "summer" and one called "winter." Some of the members feel they should receive their summer issue in summer and the winter issue in early winter before the end of the calendar year. In theory this is a good idea, in practice it may never happen with a volunteer Editor. Some of the following elements have caused delays in production of each issue I have worked on, travel requirements of the Editor's employment, follow-up phone calls and letters to get essential contributions, locating volunteer typists, scheduling problems with printers who may have a back log of commitments and the slow delivery schedule the Post Office uses for bulk rate mail.

Several people have suggested to me that, when delays occur, the date should be changed with a note to members advising that 2 issues have been combined. I have been reluctant to do this because I agreed to provide 2 issues for each of two years. I have done that and as of this date each volume is complete with two issues. Should the Executive Council determine the Bulletin should be issued on a specific date, they will need to be sure to have a commitment from both the Editor and the printer and possibly consider a more expensive mailing rate.

In spite of what may sound like an avalanche of problems alluded to above, I have enjoyed being your Editor. Particularly rewarding has been a variety of contacts with many of you. The tasks are not insurmountable. I have learned a lot. I would encourage any one with an inclination not to fear the job of Editor, but to seek it. It is a personnally rewarding experience. I thank all of you for your support and particularly the many who have contributed to each issue. Keep up the good work and help Joe Strauch provide our organization with an ever increasingly effective Bulletin.

Jim King
Editor-retiring



Bob Hines

Minutes of the Annual Executive Council Meeting
January 23-24, 1980

The Executive Council meeting was convened by Chairman Ralph Schreiber at 3:05 p.m., January 23. Members present included the Chairman, Vice-Chairman Palmer Sekora, Secretary Paul Springer, Treasurer Betty Anne Schreiber, and Regional Representative Kees Vermeer from British Columbia, Lora Leschner from Washington, Palmer Sekora from Oregon, Bob Boekelheide from Nothern California, and Ralph Schreiber from Southern California. In addition, former Chairman and Editor Dan Anderson and 10 other PSG members were present.

Betty Anne Schreiber presented the Treasurer's report. This showed the following:

Balance on hand at end of last meeting	$1008.39
Income	4328.58
Outgo	1206.27
New balance	5297.32

Bills still to be received including the printing and mailing charges for the summer 1979 issue just published and the winter 1979 issue to be published shortly will leave an approximate balance of $4500.

The Chairman pointed out that after considerable effort the Treasurer had developed an up-to-date list of active members and their addresses.

The policy statement of the Seabird Sanctuary Committee, Palmer Sekora-Chairman, was approved, subject to editorial correction and will be published in the next issue of the Pacific Seabird Group Bulletin.

The Chairman discussed the status of a proposed new international marine and colonial birds journal to accomodate the need for a publication outlet for the additional papers now being produced on these species. This would be a refereed journal with a managing editor in which the authors would provide camera-ready copy for photo offset reproduction. Of the various alternatives considered, the consensus was for a journal consisting of two issues a year containing 200-300 pages at an annual cost of $10-15. The Colonial Waterbird Group(CWG) endorses a journal in concept but has only a limited budget. Their initial effort is to improve the quality of the proceedings of their annual meetings. The Council agreed that the matter of a new journal should be looked into further. Suggestions received included seeking partial financial support from a foundation, and possible joint publication with the Marine Mammal group.

Lora Leschner raised the matter of publication of the full papers presented at PSG meetings, rather than abstracts. It was agreed that for the present the papers should be kept in their present abstract form. These serve as preliminary reports of which the authors have the prerogative to publish more fully in the various ornithological journals.

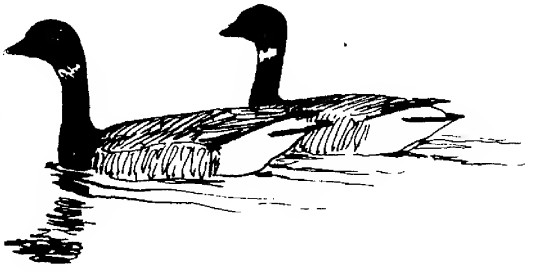
The Chairman reported that only 42 replies were received to the nearly 400 joint PSG-CWG questionnaires that were sent to PSG members during the summer. Those responding favored the continuation of separate organizations with no merger, maintenance of the PSG Bulletin in its present form, joint meetings held periodically, no joint committees, and generally closer communication between the two organizations. John Ogden reported that a similar response was received by CWG except that its members favored joint committees.

Douglas Siegel-Causey reviewed his proposal for formation of a new Committee on Foreign Translations. Its function would be to receive and offer suggested papers for translation, and arrange through its own or other means to have such papers translated. The Committee would also publish a list of translations of seabird papers already available. The Council approved the idea of such a Committee and the Chairman appointed Douglas Siegel-Causey as Chairman. Monica Herzig-Zurcher agreed to serve as a committee member. The Committee chairman will prepare a statement on the objectives and procedures of the new Committee for the next issue of the PSG Bulletin.

The Chairman stated that joint urgent requests had been received from the International Ornithological Congress and the International Committee for Bird Protection asking that PSG identify within the next several weeks, seabird species whose population status is sufficiently critical that immediate attention should be directed toward them, areas and habitats in need of study and protection, sources of funding, and proposals for worthy projects. PSG members are encouraged to submit their suggestions on this matter to the Chairman as soon as possible.

A request for nominations for Regional Representative positions to be filled for the 1980-81 term was submitted by the Secretary to the membership along with the PSG mailing in August and produced several names. However, no ballots for election of officers for 1980 and of Regional Representatives for 1980-81 were sent out by a Coordinator of the Election Committee. After considerable discussion by the Council, the Chairman appointed Lora Leschner assisted by Bob Boekelheide, Craig Harrison, and Kees Vermeer to develop a slate of nominees. Subsequently, the following willing candidates were named to be placed on a ballot to be sent to the membership within the next month:

Chairman - Ralph Schreiber
Kees Vermeer
Vice-Chariman - Palmer Sekora
Duff Wehle
Secretary - Paul Springer
Treasurer - Dee Boersma
Betty Anne Schreiber
Southern California - George Hunt
John Ogden
Oregon - Mark Strong
Jay Watson
British Columbia - Ian Robertson
Non-Regional - Judith Hand
Douglas Siegel-Causey



Black Brant

In response to the need for an editor to replace Jim King after his completion of the winter 1979 issue, two names were received prior to the meeting: Lora Leschner nominated by Jim King and Joe Strauch who volunteered. Lora Leschner agreed to withdraw her name but to serve as editor during a future term if so requested. Following this the Council approved the naming of Joe Strauch to serve as editor starting in 1980.

Every attempt will be made to get the winter 1979 issue out in short order. It will contain the Chairman's page, notices, correspondence, and abstracts of the January 1980 meeting.

The meeting was adjourned at 5:50 p.m.

A continuation of the Executive Council meeting was called to order by the Chairman at 7:30 p.m., January 24. The Council members present at the preceding meeting plus about 20 other PSG members were in attendance.

After considerable discussion the Vice-Chairman made a motion that the following locations be considered for the forthcoming annual meetings and these were approved by the Council:

1980-81 Tucson or San Diego
1981-82 Joint meeting with CWG, possibly at Corpus Christi
1982-83 Hawaii or Baja California

These meetings would be held at a suitable time in November, December or January except for the joint meeting in 1981-82 which might be held in October. In order to accomodate the increasing number of papers and in order to avoid concurrent sessions, it was felt that future meetings would have to be lengthened to 3 days. Hopefully this would allow for the presentation of 20-minute papers for those who need this length of time.

The Chairman suggested that the special offer for purchase of back issues of the Bulletin at $1 per copy be withdrawn and that the price be raised to $2.50 per copy. He made a motion to this effect which was approved by the Council. Consideration will be given to raising the subscription rate for libraries and organizations next year after Volume 7 of the Bulletin for 1980 has been issued at the regularly scheduled times.

The Treasurer felt that since requests for back issues come to her, it would streamline operations to have these issues transferred to the Treasurer's office.

The Chairman stated that the fee of $10 per person pertained to all meeting registrants with a professional interest in seabirds. The registration fee of $5 is intended to apply only to a spouse or companion without a professional interest in seabirds who accompanies a professional registrant.

Various Council members pointed out the need for the Chairman to serve one prior year in a capacity whereby that person could become familar

with the nature and demands of the position and serve more effectively during the actual term as Chairman. Palmer Sekora moved that the office of Vice-Chairman in the Bylaws be retitled Chairman-Elect so that this person would serve 1 year in this capacity and then automatically serve the following year as Chairman. He further moved that other changes in the Bylaws with reference to the Chairman be made to reflect this change. This motion was approved by the Council. This and other changes in the Bylaws necessary to clarify problems caused by the Bylaws change of March 3, 1977 will be offered to the membership for voting within the next month.

A spirited discussion followed on the role and activities of PSG. The Chairman directed the Secretary to assemble all existing information on the responsibilities and duties of Officers, Regional Representatives and Committee Chairmen contained in the Bylaws, past issues of the Bulletin, and PSG files and to make it available for the guidance of these respective groups.

The meeting adjourned at 9:15 p.m.

Respectfully submitted,

Paul F. Springer
Secretary

Red Phalaropes
from painting by James Welsh

PACIFIC SEABIRD GROUP

Seabird Sanctuary Policy Statement

(Adopted by the Executive Council 23 January 1980)

Marine birds are one of the most neglected natural resources in the world. Knowledge of this resource is significantly less developed than for most other avifauna. Hundreds of millions of seabirds are known to exist in the Pacific Basin. These birds are often dependent upon a large geographical area and are an international resource that has to be managed in this light. Seabirds have distinctive characteristics which make management and protection difficult. Many species are long-lived, have deferred maturity, lay small clutch sizes and require a long time in recovering from reduced population levels. We know that many breeding populations utilize island ecosystems where they are particularly vulnerable to predators, disease and human disturbance. Large seabird concentrations occur in areas heavily used by humans such as the fishing grounds and oil development areas of the continental shelf. Severe impacts from human activity and exploration are likely.

The most important threats facing seabirds today are petroleum extraction and transportation, introduced predators, human disturbance, mineral exploration and extraction, human competition for the fishery resource, and oceanic pollution.

As these activities proliferate the need for sanctuaries becomes more acute.

The policy of the Pacific Seabird Group, as regards seabird sanctuaries is to:

1. Encourage governmental and private establishment, and active protection, of seabird sanctuaries and their adjacent waters.

2. Discourage deliberate or accidental introductions of non-native plants and animals into seabird sanctuaries.

3. Encourage removal of noxious introductions in seabird sanctuaries.

4. Encourage governments, their agencies, and private interests to formulate and implement comprehensive management plans to provide adequate protection for seabird colonies in areas which may be developed.

5. Recognize the public educational value of seabird colonies and thus encourage government agencies to devise wise educational programs which do not have a detrimental effect on the seabird resource.

6. Recognize all seabird colonies, roosts, loafing sites, and adjacent waters as important and urge establishment as sanctuaries.

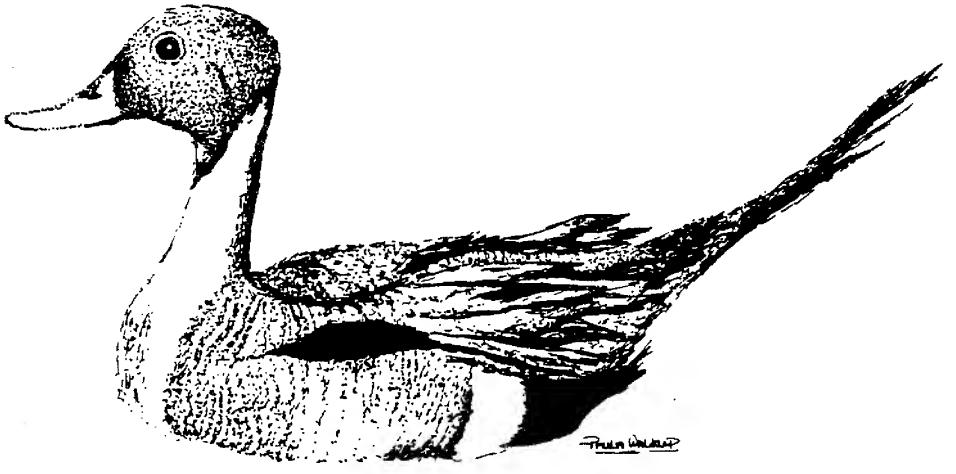
7. Work for more effective regulation of offshore oil and mineral development and for more stringent tanker safety laws, particularly at and near seabird colonies.

8. Recognize use of seabirds and eggs in traditional ways for food or cultural values as long as such use does not unduly affect seabird populations.

9. Encourage further research of seabird sanctuaries and other components of the surrounding ecosystem.

10. Recognize all components of the ecosystem in a sanctuary policy.

The Pacific Seabird Group will support actions compatible with this policy and urges that members of the Group and public keep the Executive Council advised of opportunities to act in these matters.

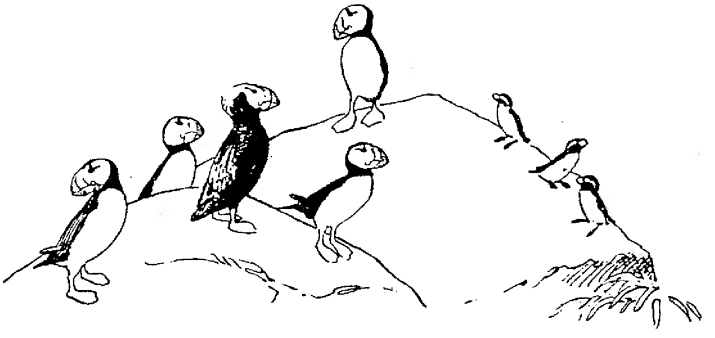


Pintail

Bulletin Board

Announcement and Call for Papers

The fourth annual meeting of the Colonial Waterbird Group will be held 9-12 October 1980 in Ottawa, Canada. It will be co-sponsored by the Colonial Waterbird Group and the Canadian Wildlife Service. A symposium on the effects of humans on colonial birds is planned, and a Proceedings will be published. Anyone wishing to contribute to the symposium should send an abstract to J. Burger by 1 August 1980. For information on contributing papers, please contact J. Burger, Department of Biology, Livingston College, Rutgers University, New Brunswick, New Jersey 08903. Abstracts must be received by 1 September 1980. For information on registration, please contact R. Michael Erwin, Migratory Bird and Habitat Research Laboratories, U.S. Fish and Wildlife Service, Laurel, Maryland 20811.



Bob Hines

Call for Papers

Multivariate Workshop; 23-24 April 1980 at Radisson Burlington Hotel; Wildlife Biology Program; University of Vermont; Burlington, Vermont 05405

Despite the inherent values of multivariate statistics in studies of wildlife habitat, the methods are easily mis-used or used without regard for underlying statistical assumptions. Also, the results of multivariate analyses may be difficult to interpret. To achieve a greater degree of uniformity in the use and interpretation of multivariate studies of wildlife habitat, a workshop has been organized with the following objectives:

...discuss methods and merits of multivariate statistics and their application to studies of wildlife habitat.

...improve awareness of the statistical assumptions of multivariate analyses.

...foster improved interpretation of research results.

...publish a proceedings which will encourage the use of improved statistical methods in studies of wildlife habitat.

The meeting will feature invited and submitted papers. Invited speakers will address selected multivariate statistical procedures and will emphasize their application to studies of wildlife habitat. Submitted papers should illustrate current or proposed application of multivariate methods.

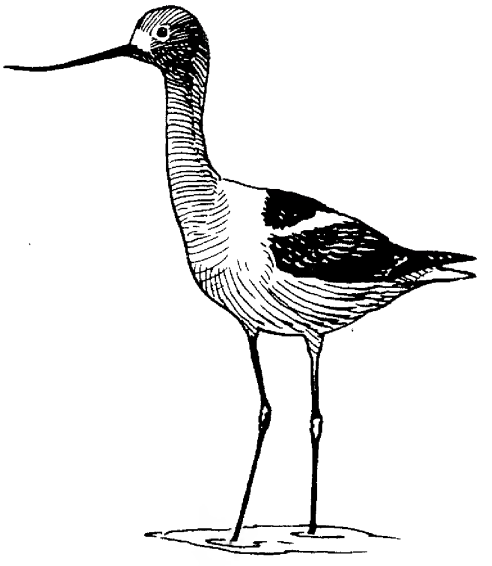
Wader Study Group

The Wader Study Group(WSG) is an association of amateur and professional workers on the Charadrii(waders or shorebirds) from all parts of the world. The Group was established in 1970 under the chairmanship of Dr. Clive Minton and the auspices of the British Trust for Ornithology(BTO), but has become an increasingly international organisation. By 1978 membership of the WSG was over 400 people, about half of members living in countries other than Britain and including some from America, Asia, Africa and Australasia as well as Europe. North American members have recently formed a distinct section within the WSG. Interests of the Group have diversified from the original concentration on ringing and related studies to include counts, breeding biology, feeding ecology, behaviour, and all aspects of research on waders.

The Wader Study Group Bulletin provides a forum for news, notices, recent recoveries and publications, new methods of catching and study, articles and preliminary or interim publication of results from all parts of the world.

The Bulletin appears three times per year, in April, August and December. Items should be sent to one of the Editors(M.W. Pienkowski, Dept. of Zoology, University of Durham, South Road, Durham DH1 3LE, England; and G.H. Green, Windy Ridge, Little Comberton, Pershore, Worcs. WR10 3EW, England). Material relating to America may be sent to the editor of the N. American section(Dr.R.I.G. Morrison, Canadian Wildlife Service, 1725 Woodward Drive, Ottawa, Ontario, Canada K1G 3Z7).

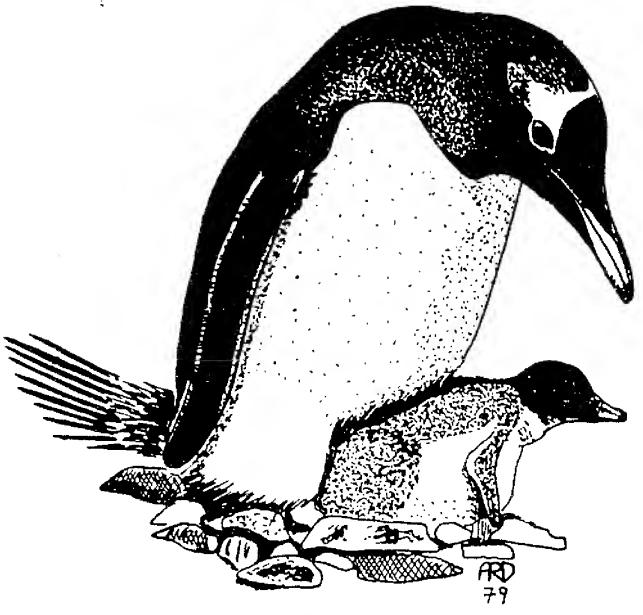
Membership of the WSG is open to all individuals or groups. In America applications may be sent to Dr. Edward H. Miller, Biology Department, York University, 4700 Keele Street, Downsview, Ontario M3J 1P3, Canada. Cheques for $16.25(bulletins by air-mail) or $12.50(bulletins by surface mail) in Canadian(preferably) or U.S. dollars should be payable to "Wader Study Group".



Avocet

Preserve That Carcass

Specimen Deposition: Individuals and organizations who collect birds for stomach/food sample analyses are asked to please not destroy the carcass after removing the material needed for your individual projects. The carcass is valuable scientific specimen and museums are willing to preserve this material for future studies on morphology, molt, taxonomy, etc. Any individual actively collecting or planning to collect birds is asked to contact me regarding deposition of the specimens for permanent storage. It really is a crime to merely destroy the carcass and the Natural History Museum of Los Angeles County is willing to pay for shipment of the material. Please contact R.W. Schreiber, Curator of Ornithology, LACMNH, 900 Exposition Blvd., Los Angeles, CA 90007. Phone 213-744-3366.



Gentoo Penguin

Ralph Schreiber submitted this list of publications:

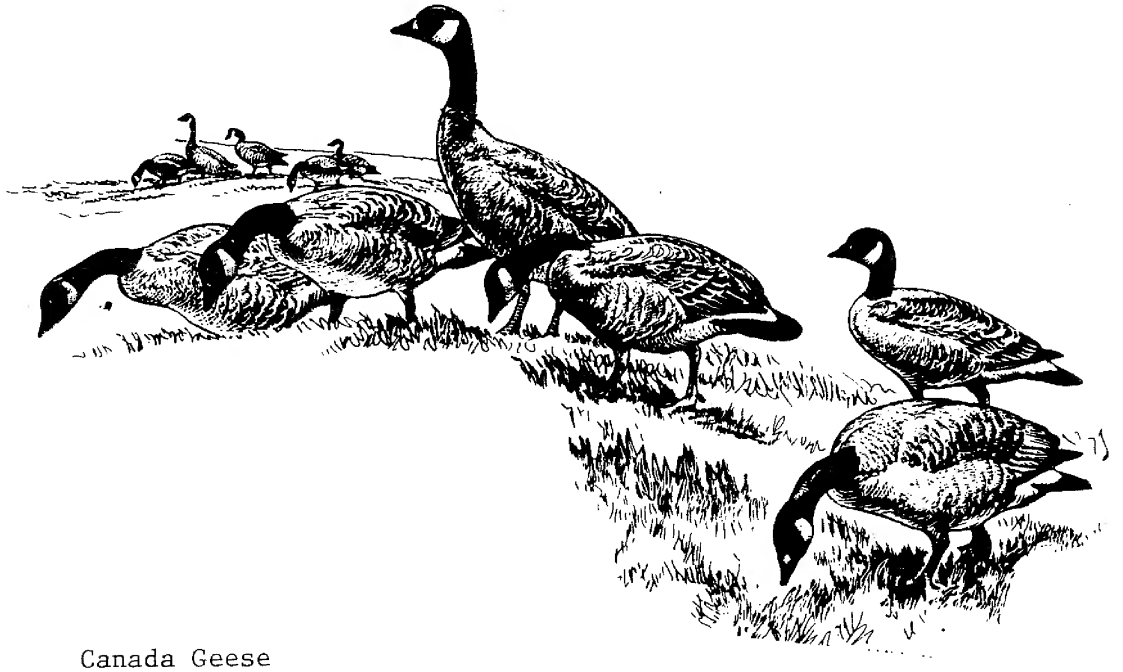
Publications Available:

Joint Biological Expedition to North East Greenland 1974. Edited by G.H.Green and J.J. Greenwood
Order from Dr. J.J.D. Greenwood
Department of Biological Sciences
The University, Dundee, Scotland 6.00 pounds

Oxford and Cambridge MAURITANIAN Expedition 1973 Report. Edited by Wm. J.A. Dick
Order from W.J.A. Dick
8 Madingley Road
Cambridge CB30EE England 1.00 pound

An Ornithological Expedition to the Namib Coast. Edited by L.G. Underhill and D.A. Whitelaw
Order from M. Waltner
5 Montague Way
Pinelands
7405 South Africa 6.00 Rand(airmail)

These excellent reports contain especially valuable data on shorebirds and other species of interest to the Pacific Seabird Group.



Canada Geese

Stephen R. Johnson of LGL Alaska has provided the following list of papers that are available through him at:

L.G.L. Alaska
P.O. Box 80607
Fairbanks, Alaska 99708

Alliston, W.G. 1976. A summary of research on birds, marine mammals and marine ecology in the districts of Franklin and Keewatin, N.W.T., 1974 and 1975. Prepared for Polar Gas Project.

Alliston, W.G., M.S.W. Bradstreet, M.A. McLaren, R.A. Davis and W.J. Richardson. 1976. Numbers and distribution of birds in the Central District of Franklin, N.W.T. June-August, 1975. Two volumes. Prepared for Polar Gas Project.

Bradstreet, M.S.W. 1976. Summer feeding ecology of seabirds in Eastern Lancaster Sound, 1976. Prepared for Norlands Petroleums Ltd.

Bradstreet, M.S.W. 1977. Feeding ecology of seabirds along fast-ice edges in Wellington Channel and Resolute Passage, N.W.T. Prepared for Polar Gas Project.

Bradstreet, M.S.W. 1979. Feeding ecology of seabirds in northwest Baffin Bay, 1978. Prepared for Petro-Canada.

Davis, R.A., and A.N. Wiseley. 1974. Normal behaviour of Snow Geese on the Yukon-Alaska North Slope and the effects of aircraft-induced disturbance on this behaviour, September, 1973. Arctic Gas Biol. Rep. Series, Vol. 27, Chapt. 2.

Davis, R.A., K. Finley, M. Bradstreet, C. Holdsworth, and M. McLaren. 1975. Studies of the numbers and distribution of birds and marine mammals in the Central Canadian Arctic - 1974: a supplement. Prepared for Polar Gas Project.

Davis, R.A., and A.D. Sekerak. 1977. Ecological significance of Northwest Baffin Bay and Eastern Lancaster Sound: an overview report. Prepared for Petro-Canada.

Gollop, M.A., and R.A. Davis. 1974. Autumn bird migration along the Yukon Arctic coast, July, August, September, 1972. Arctic Gas Bio. Rep. Series, Vol. 13, Chapt. 3.

Gollop, M.A., J.E. Black, B.E. Felske, and R.A. Davis. 1974. Disturbance studies of breeding Black Brant, Common Eiders, Glaucous Gulls and Arctic Terns at Nunaluk Spit and Phillips Bay, Yukon Territory, July 1972. Arctic Gas Biol. Rep. Series, Vol. 14, Chapt. 4.

Gollop, M.A., J.R. Goldsberry, and R.A. Davis. 1974. Aircraft disturbance to moulting sea ducks, Herschel Island, Yukon Territory, August, 1972. Arctic Gas Biol. Rep. Series, Vol. 14, Chapt. 5.

Gollop, M.A., and R.A. Davis. 1974. Gas compressor noise simulator disturbance to Snow Geese, Komakuk Beach, Yukon Territory, September, 1972. Arctic Gas Biol. Rep. Series, Vol. 14, Chapt. 8.

Gollop, M.A., and W.J. Richardson. 1974. Inventory and habitat evaluation of bird breeding and moulting areas along the Beaufort Sea coast from Prudhoe Bay, Alaska to Shingle Point, Yukon Territory, July, 1972. Arctic Gas Biol. Rep. Series, Vol. 26, Chapt. 1.

Gunn, W.W.H. 1975. The need to preserve the integrity of the Mackenzie Delta. Chapter 5, Ornithological studies: cross delta route. Prepared for Canadian Arctic Gas Study Ltd.

Gunn, W.W.H., and C.E. Tull. 1976. Recommendations for a program of environmental surveillance and a program of ornithological monitoring in regard to the proposed Arctic Gas pipeline. Prepared for Canadian Arctic Gas Study Ltd.

Hansen, W.J. 1975. The marine environment of the Beaufort Sea: a textual review and annotated bibliography of the climatic and oceanographic literature pertinent to avifaunal studies. Prepared for Canadian Wildlife Service, for the Beaufort Sea Project.

Johnson, S.R., W.J. Adams and M.R. Morrell. 1975. The birds of the Beaufort Sea. Prepared for Canadian Wildlife Service, for the Beaufort Sea Project.

Johnson, S.R., W.E. Renaud, W.J. Richardson, R.A. Davis, C. Holdsworth and P.D. Hollingdale. 1976. Aerial surveys of birds in Eastern Lancaster Sound, 1976. Prepared for Norlands Petroleum Ltd.

Johnson, S.R., W.E. Renaud, R.A. Davis and W.J. Richardson. 1976. Marine mammals recorded during aerial surveys of birds in Eastern Lancaster Sound, 1976. Prepared for Norlands Petroleums Ltd.

Johnson, S.R. 1978. Beaufort Sea barrier island-lagoon ecological process studies: Chapter 2, Avian ecology in Simpson Lagoon, 1977. Prepared for U.S. Outer Continental Shelf Environmental Assessment Program, U.S. National Oceanic and Atmospheric Administration.

Johnson, S.R. 1979. Beaufort Sea barrier island-lagoon ecological process studies: Chapter 1, Avian ecology in Simpson Lagoon, 1978. Prepared for Outer Continental Shelf Environmental Assessment Program, U.S. National Oceanic and Atmospheric Program.

Koski, W.R., and M.A. Gollop. 1974. Migration and distribution of staging Snow Geese on the Mackenzie Delta, Yukon and eastern Alaskan North Slope, August and September, 1973. Arctic Gas Biol. Rep. Series, Vol. 27, Chapt. 1.

Koski, W.R. 1975. A study of the distribution and movements of Snow Geese, other geese, and Whistling Swans on the Mackenzie Delta, Yukon North Slope, and Alaskan North Slope in August and September, 1974, including a comparison with similar data for 1973. Arctic Gas Biol. Rep. Series, Vol. 30, Chapter 1.

Koski, W.R. 1975. Continuing surveys of terrestrial bird populations on the Yukon-Alaskan North Slope: June and July 1974. Arctic Gas Biol. Rep. Series, Vol. 30, Chapter 3.

Koski, W.R. and W.J. Richardson. 1976. Review of waterbird deterrent and dispersal systems for oil spills. PACE Report No. 76-6.

Koski, W.R. 1977. A study of the distribution and movements of Snow Geese, other geese, and Whistling Swans on the Mackenzie Delta, Yukon North Slope, and Alaskan North Slope in August and September, 1975. Arctic Gas Biol. Rep. Series, Vol. 35, Chapt. 2.

Koski, W.R. 1977. A study of the distribution and movements of Snow Geese, other geese, and Whistling Swans on the Mackenzie Delta, Yukon North Slope, and Eastern Alaskan North Slope in August and September, 1976. Prepared for Canadian Arctic Gas Study Ltd.

LGL Ltd. 1974. Dispersal and rehabilitation of waterbirds: review of current knowledge and recommendations for reducing bird mortality associated with oil spills. Prepared for Petroleum Association for Conservation of the Canadian Environment.

McLaren, P.L. and W.E. Renaud. 1979. Distribution of sea-associated birds in northwest Baffin Bay and adjacent waters, May-October 1978. 3 Volumes. Prepared for Petro-Canada.

Patterson, L.A. 1974. An assessment of the energetic importance of the North Slope to Snow Geese (*Chen caerulescens caerulescens*) during the staging period in September, 1973. Arctic Gas Biol. Rep Series, Vol. 27, Chapt. 4.

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Southern African Seabird Group

January 7, 1980

Dear Sir:

I enclose a copy of a resolution passed by delegates attending a Symposium on Birds of the Sea and Shore, 19-23 November 1979, at the University of Cape Town, South Africa, organized by the Southern African Seabird Group. At the symposium several papers were read that confirmed the serious plight of the Jackass Penquin - now included in the new IUCN Red Data Book as a vulnerable species.

Its population, on the west coast of southern Africa, is thought to have halved in numbers in the last twenty years and the decrease is continuing. Delegates were of the opinion that trade in species listed in the Red Data Book was wrong in principle, irrespective of the number of individuals involved.

I would appreciate it if you could print the resolution in your publication and request your readers to write in its support to the relevant South African authority whose address is given: The Secretary, Department of Industries, Box X342, Pretoria, 0001, South Africa.

I would be happy to supply further information on the resolution.

Yours faithfully,

John Cooper, Chairman
c/o FitzPatrick Institute
University of Cape Town
RONDEBOSCH 7700
South Africa

RESOLUTION

The Symposium on Birds of the Sea and Shore held at the University of Cape Town, 19-23 November and organized by the Southern African Seabird Group, the Cape Bird Club and the Western Cape Wader Study Group, taking note:

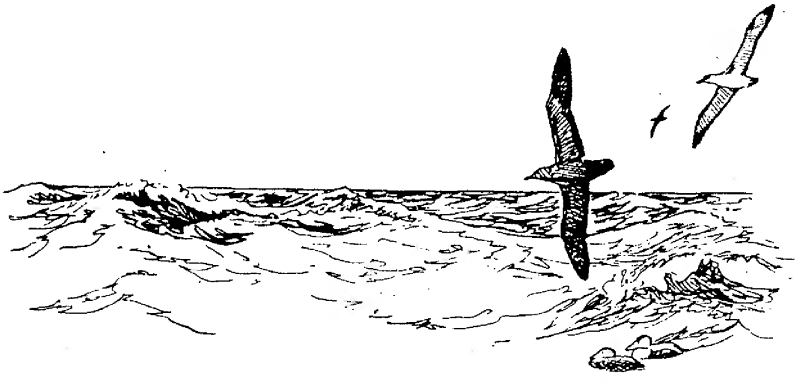
1. That the Jackass Penguin Spheniscus demersus, a species endemic to southern Africa, has decreased and is continuing to decrease in numbers, especially on the west coast of southern Africa.
2. That the Jackass Penguin is listed with the category "vulnerable" in the new edition of the International Union for the Conservation of Nature(IUCN) Red Data Book, is listed in the south African Red Data Book, and is listed in the Convention for International Trade in Endangered Species(CITES)(Appendix 2), to which South Africa is a signatory.

3. That several Zoological Gardens maintain breeding populations of Jackass Penguins which produce birds potentially available for trade to other Zoological Gardens.
4. That oiling of Jackass Penguins continues to occur and two oiling incidents have occurred at St Croix and Dassen Islands in 1979.
5. That illegal landings on at least one island have occurred and have resulted in significant disturbances to Jackass Penguins and other breeding seabirds, and that on several occasions it is known that Jackass Penguin's eggs and adult birds have been collected and removed from the island.

Therefore recommends and resolves:

1. That all further trade, international or national in wild-caught Jackass Penguins to Zoological Gardens and Aquariums for public display be halted until such time as the species is no longer included in the IUCN Red Data Book.
2. That the existing laws relating to oiling in southern African waters be strictly enforced.
3. That the breeding islands of Jackass Penguins and other seabirds be continued to be patrolled and that the existing laws controlling access to the islands be strictly enforced.
4. That monitoring of Jackass Penguin numbers be continued.

The Symposium further resolved that the above resolution be sent to the International Council for Bird Preservation(South African Section) with a request that it be forwarded to the relevant authorities and that ICBP(SA Section) is requested to report to the organizing bodies of the Symposium on any replies it may receive from the relevant authorities.



Bob Hines

PROGRAM
SYMPOSIUM ON BIRDS OF THE SEA AND SHORE
19-23 NOVEMBER 1979. University of Cape Town.

G. M. Puttick
Curlew Sandpiper foraging related to prey availability.

B. Furness
Feeding behavior of Arctic Skuas in their breeding areas.

A. E. Burger
Food, foraging and social behaviour of Lesser Sheathbills at Marion Island.

A. Crowe
Aspects of the biology of Sanderlings and White-fronted Plovers in the south-western Cape.

A. McLachlan and T. Woolridge
The role of shorebirds in the ecology of of eastern Cape beaches.

P. A. R. Hockey
Observations of prey-specific feeding techniques in the Black Oystercatcher Haematopus moquini and their bearing on the evolution of prey specificity in the Haematopodidae.

J. -F. Voisin
The Giant Petrels breeding at Gough Island.

J. Grindley
Observations of seabirds at Marion and Prince Edward Islands in 1973.

J. M. Mendelsohn
Prion movements and low-pressure systems at Marion Islands.

J. Cooper and R. M. Randall
Range and movements of the Jackass Penquin.

A. J. Williams
Factors which may affect the diet and timing of breeding in northern Gentoo Penquin populations.

R. M. and B. M. Randall
Annual cycle of the St. Croix Island Jackass Penquins.

A. J. Prater.
Moult strategy in waders.

C. L. Clinning
Mount and measurements of Turnstone in South West Africa/Namibia.

W. Waltner and J. C. Sinclair
Distribution and biometrics of the Terek Sandpiper in southern Africa.

Cape Town Program (cont. 2)

W. J. A. Dick
The 1978/79 Spring passage of Siberian Knot.

L. G. Underhill
A classification of parts of the Cape and Namibian coastline based on counts of waders (Charadrii).

H. G. Robertson
Annual summer and winter fluctuations in numbers of summering and over-wintering Palaearctic waders at Langebaan Lagoon, 1973-1979.

P. N. Ferns
Seasonal and annual changes in the distribution of shorebirds in the Severn Estuary.

W. R. P. Bourne
Factors underlying the distribution of seabirds.

A. Batchelor
The seasonal distribution and abundance of seabirds in a section of Algoa Bay, Port Elizabeth.

R. Liversidge
Eastern Cape offshore birds.

A. Griffiths
Problems in assessing distribution and density of Southern Ocean seabirds.

P. G. H. Frost
Seabird distribution in the southwest Indian Ocean.

R. W. Furness
Estimating the food requirements of seabird and seal populations and their interactions with commercial fisheries and fish stocks.

R. T. M. Crawford and P. A. Shelton
Long term population trends for some southern African seabirds with consideration of the causative mechanisms.

M. J. Imber
Ecological segregation in the Southern Oceans as shown by prey selected by some Procellariformes.

M. J. Imber and A. Berruti
A review of the cephalopod prey of Procellariformes.

J. Burger
The transition period in seabirds.

R. W. Schreiber
Nesting chronology of the Eastern Brown Pelican.

A. J. Williams
The breeding biology and taxonomic relations of living penquins with particular attention to the genus Eudyptes.

S. Mahoney
Thermal energetics of Double-crested Cormorants and Anhingas.

G. De Roos
The significance of the Isle of Vlieland in the Dutch Waddenzee for breeding and wintering waders.

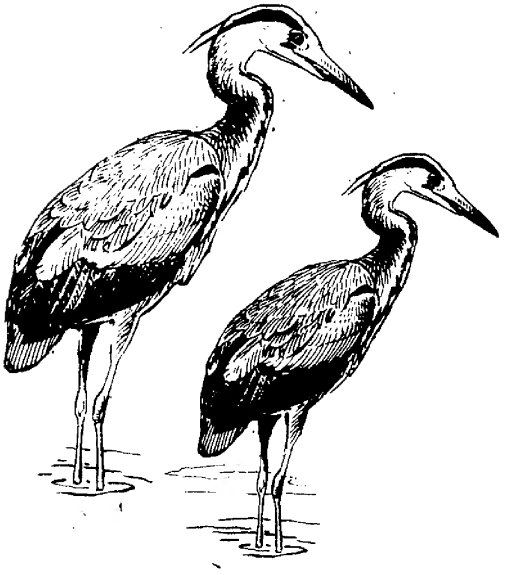
M. Gockfeld
Human influences on Common Tern reproduction: ecological and chemical.

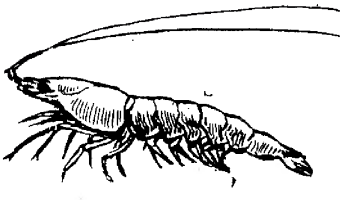
P. D. Morant, J. Cooper, and R. M. Randall
The success of rehabilitation of oiled Jackass Penquins.

P. D. Shaughnessy and J.-P. Voisin
Observations of Giant Petrels (Macronectes spp.) off the Atlantic coast of southern Africa.

G. Avery
Seabirds in the past in the Cape Province: fossil evidence.

R. K. Brooke
The place of South Africa in the world of seabirds.





January 22, 1980

Dear Sir:

At past international meetings, such as the International Ornithological Congress at Berlin, Dr. W.R.P. Bourne, speaking on behalf of our Seabird Group, raised the question of producing an International Seabird Journal with contributions from all the Seabird Groups, together with a number of other interested bodies. We gathered that most Seabird Groups were interested in participating in such a venture but were reluctant to devote their resources to its production.

At an executive committee meeting in November 1979 we decided to attempt to go ahead with an International Seabird Journal, and to provide a managing editorial board of three who would effectively be involved with the "donkey" work. The managing editorial board would all be from the U.K. but solely so that they could work effectively and be in close contact with each another. We would also propose a board of consultant editors representing all Seabird Groups, together with those countries which were interested in seabird research but which lacked such groups. Our plan was to produce a journal which would appear annually (at least at the beginning) with a format similar to "Wildfowl". That is, professionally produced, with contributions of a standard comparable with other scientific journals, with relatively short, concise contributions so that we could publish as many papers as possible in order to cater for the wide range of seabird interests. At the back of the journal would be sections containing abstracts of seabird papers, conference bulletins, and miscellaneous seabird news items. The journal would not, however, replace the newsletters or bulletins produced by most seabird groups at more frequent intervals, which serve as the prime vehicle for communication between members.

Shortly after this meeting, Dr. R. Schreiber, on behalf of the North American Seabird Groups, discussed their plans for a seabird journal with our Chairman, Chris Mead. Their aim is to produce a journal with two issues a year, starting in January 1981. The journal will cover seabirds, waders and herons. It will be produced as cheaply as possible by photographing camera-ready copy. With 1,000 subscriptions each issue would cost in the order of $15.00 each. Authors will get 50 free reprints.

Clearly these two types of journal are rather different, but it would not be wise for both to be launched at the same time. We are therefore shelving our plan, for the moment, and offering Dr. Schreiber all the help we can with his proposals. During the next few months we will be investigating ways of financing the sort of journal which we had planned. In the meantime we would welcome your comments on our plans. We aim to have our proposals finalised in time for the International Ornithological Congress in 1982.

Yours sincerely,

Dr. T.R. Birkhead,
Hon. Secretary,
Seabird Group

University of Sheffield
Sheffield S10 2TN

PROGRAM CHAIRMAN'S COMMENTS
SIXTH ANNUAL MEETING
Asilomar, California
January 23-26, 1980
Palmer C. Sekora

From the stand point of this being my first meeting as a Program Chairman it was interesting and actually a most enjoyable experience. It has certainly given me a great deal of insight on the operation of the Pacific Seabird Group, especially the fact that PSG actually operates with only a few dedicated individuals doing the majority of work. Initiation and completion of the session rested not only with the Program Chairman but with our Chairman Ralph Schrieber and Treasurer Betty Ann Schrieber. Between the three of us we handled this years meeting without the need of a local committee.

A total of 50 abstracts were submitted for presentation at this years session. This is probably one of the highest number ever submitted for a meeting and is encouraging in that seabird scientists do want to utilize the annual meeting to present their management and research results. It did present us with the problem of finding enough time to enable all authors to present their papers. Rather than entering the business of refereeing and subsequently eliminating some of the papers, various members of the Executive Council agreed that we would cut the presentation down to 15 minutes rather than the 20 minutes. We realized this put a strain on many of the authors but everything appeared to come out satisfactorily. To preclude this from occurring again, the Executive Council decided that the future meetings would be at least three days long, thus giving sufficient time to present papers. One of the deciding criteria in not refereeing papers was the number of high quality papers. It was felt that it would be a most difficult process. One of the negative aspects of a short presentation period is a lack of discussion which is probably one of the most important aspects of presenting ones data. The one thing that we did not want is to go into concurrent paper sessions which I think everybody agrees to be unsatisfactory.

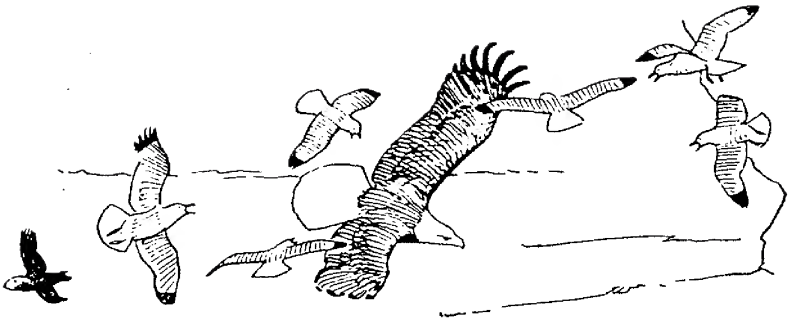
One of the disappointments of serving this past year as Vice-chairman has been the apparent lack of interest of the membership in the PSG. This has been demonstrated in several ways, the journal questionaire for example; the Chairman reported that he received only 42 replies from nearly 400 questionaires that were sent out. Another indication was our notice in the spring bulletin of starting a seabird catalog. Not one response was ever received from the membership. It is strange that since most seabird biologists appear to be very dedicated, highly motivated in protecting the seabird resource that this somehow doesn't translate into active, real world support. It's equally amazing that from my experience PSG is an organization open and ready to its membership to being used to encourage necessary management actions and research, but the fact is that nobody uses it as such. We have to realize that we can't get the support for management and research we feel is necessary but we can have some effect through the PSG. If we're not concerned and active

in this regard who will be? Members cannot expect this organization to be effective with only a few people actively involved. The success of this group will be by everybody being involved. That means by getting off your duff, being involved with committees, helping to draft letters to governmental organizations, companys, etc. that affect seabird resources. Enough of that.

For those few who were interested enough to attend, very interesting and spirited discussions occurred during the two Executive Council meetings. They ranged from budgetary matters to discussion on the seabird sanctuary policy statement. A new committee was formed to be headed by Douglas Siegel-Causey on foreign transactions. They will be coming forth with a statement on committee objectives and procedures. A discussion was held on the elections, nominations. Again it became apparent that only a few people seem to be interested in actively participating in this organization. You'll probably note in this journal also that we will soon have a new editor for the bulletin to be Joe Strauch. Council discussions also included locations for future meetings. For 1980-81 it will be at Tuscon, provided we get a support group; if not, then in San Diego. In 1981-82 it will be a joint meeting with the Colonial Waterbird Group, possibly at Corpus Christi, and in 1982-83 it will be Hawaii or Baja California.

Last but certainly not least I would like to thank the Session Chairpersons, Ralph Schrieber for the first session, Paul Springer and Don McCrimmon the second, Lora Leschner the third and Dan Anderson the last session.

Brown Pelican



Bob Hines

ABSTRACTS

BEHAVIOR AND ATTENDANCE PATTERNS OF THE FORK-TAILED STORM PETREL

Simons, Theodore. Wildlife Science Group, University of Washington, Seattle, WA 98195

Specially designed event recorders and direct observations were used to monitor the behavior and attendance patterns of breeding Fork-tailed Storm Petrels over two seasons on the Barren Islands, Alaska. The asynchrony of breeding exhibited by these birds apparently reflects the influence of several factors including snow conditions on the breeding grounds, egg neglect during incubation, and food availability. Communication between breeding birds is characterized by auditory and tactile signals. Two distinct vocalizations were identified, one of which appears to be a sex-specific male call used primarily during pair formation. Generally, both adults are present in the burrow on the night of egg-laying, and the male takes the first incubation shift. Incubation shifts range from one to five days with 2- and 3-day shifts being the most common. Growth parameters of the chicks, reproductive success, and breeding chronology varied considerably between years, and this presumably reflects differences in the availability of food sources. Adults apparently respond to changes in food availability during incubation by altering their attendance patterns. When food is available, incubation shifts are shorter and egg neglect is reduced. The observation of an adult and a chick during hatching indicates that adults assist the chick in emerging from the shell. Attendance patterns of the adults during the nestling stage also vary from year to year, and when food is readily available the brooding period and feeding frequency increase. Chicks become quite active late in the nestling stage and begin to venture from the burrow several days prior to fledging. Adults continue to visit the chick during this period, although they reduce the amount of food delivered. Chicks exhibit a distinct prefledging weight loss.

CHICK FEEDING AND ADULT FORAGING PATTERNS OF PIGEON GUILLEMOTS (CEPPHUS COLUMBA) IN PRINCE WILLIAM SOUND, ALASKA

Eldridge, William D. and Katherine J. Kuletz. U.S. Fish & Wildlife Service, Anchorage, Alaska 99503

Pigeon guillemots (Cepphus columba) have been studied for two consecutive seasons on Naked Island in Prince William Sound, Alaska. During the 1979 season, efforts were concentrated on chick and adult feeding ecology. Food items were identified to family level during 158 hours of observation from blinds. Feeding frequency of one nest was obtained by time-lapse photos set at 23 second intervals for over 250 daylight hours. During our observations, 157 foraging sites were mapped for color marked birds and birds leaving known nests.

The 1,229 food items brought to chicks included: sandlance (53.1%), blennies (19.2%), sculpin (14.2%), codfish (2.0%), flatfish (1.5%), invertebrates (0.4%), and unidentified items (9.5%). Time-lapse photography proved useful for determining feeding rate and time, but unreliable for prey identification. Feeding rates determined from time-lapse film analysis were comparable to observations from the blinds, of approximately one fish/hour/nest.

There is some evidence that pigeon guillemots are species-selective in food gathering, and that individuals have preferred feeding areas. Our data suggest there are distinct feeding areas for birds of different colonies. Individual preferences for a foraging spot, at least within the same day, may lead to specificity in food items.

INCUBATION AND BURROW TEMPERATURES OF FORK-TAILED STORM-PETRELS

Boersma, P.D. University of Washington, Seattle. WA 98195

Fork-tailed Storm-Petrels have some unusual reproductive characteristics. Intermittently, throughout the incubation period, they neglect their eggs; and the eggs survive. However, inattention is costly: chicks from neglected eggs are smaller and die more frequently than chicks from eggs that were attended more regularly. Incubation temperatures for Fork-tailed Storm-Petrels are extremely low--in fact, the lowest known for any bird. The mean temperature in the center of 22 eggs that were removed from the burrow and immediately inserted with a thermocouple was 29.7°C. Eggs, when unattended, were as cold as 6.1°C. One egg reached a temperature of 36.3°C. when the probe was just underneath the brood patch but within the egg. To quantify the temperature extremes within an egg, two probes were placed on opposite sides of the egg and the temperature differential was usually 6°C. Burrow air temperatures were lowest when the adult was absent. Humidity of the burrow was always higher inside rather than outside the burrow. The extremely low temperatures and frequency of egg neglect suggest that these factors are the major determinates for the long incubation periods of Fork-tailed Storm-Petrels. Because enzymes are presumably adapted to tolerate neglect and cool incubation temperatures, the effect may be the long incubation period characteristic of the Procellariiformes.

CHANGES IN REPRODUCTIVE SUCCESS AND FOOD HABITS OF THREE MARINE BIRDS AT KODIAK ISLAND, ALASKA

Baird, Patricia A. USFWS, Anchorage AK

The breeding biology and feeding ecology of three marine birds, Glaucous-winged Gulls, Black-legged Kittiwakes, and Tufted Puffins, were studied at Sitkalidak Strait, Kodiak Island, during the breeding seasons of 1977 and 1978. There were marked differences in reproductive success between the two years for the Larids, while there was none for the Tufted Puffins. Likewise, there were qualitative and quantitative differences between years with respect to prey taken by the Larids, but there were no differences for the Tufted Puffins. These changes over the two years raise important questions regarding availability of food in the water column, and its influence on reproductive success.

BREEDING PHENOLOGY AND PRODUCTIVITY IN A RECENTLY EXPANDED POPULATION OF BLACK-LEGGED KITTIWAKES

Hatch, Scott. Museum of Vertebrate Zoology, 2593 Life Sciences Building, Univ. of California, Berkeley, CA 94720

There has been at least a ten-fold increase in the population of Black-legged Kittiwakes on Middleton Island, Alaska, during the past two decades, with the present population numbering about 150,000 birds. This colony shows major departures in habitat use and breeding phenology from patterns observed elsewhere in the Gulf of Alaska. During the 1978 breeding season distinct fractions of the population were observed which exhibited marked differences in breeding performance. The syndrome observed in the less productive elements of the population included relatively late breeding phenology, a high proportion of nonbreeding birds, depressed clutch-size, and poor hatching success. This paper outlines these phenomena and discusses their possible origin in age-related effects of recent changes in population structure.

THE STRUCTURE OF ALASKAN SEABIRD BREEDING COMMUNITIES: THE ROLE OF SPECIES INTERACTIONS

Whittam, Thomas S. and Siegel-Causey, Douglas. Department of Ecology, University of Arizona

Ecologists believe competition to be important in structuring communities. To test the role of competition in structuring seabird breeding communities, density estimates for 28 species of colonial seabirds are examined. Data are derived from the "Catalogue of Alaskan Seabird Colonies" by Sowls, Hatch, and Lensink. Two hypotheses are suggested: competition for nest sites and competition for food. It appears that species interaction plays a minor role in regulating species densities.

MOLT IN SOOTY SHEARWATER (PUFFINUS GRISEUS) AND SHORT-TAILED SHEARWATER (P. TENUIROSTRIS) IN THE NORTH PACIFIC OCEAN AND BERING SEA

Guzman, Juan. University of Calgary, Calgary, Alberta

Molt is one of the most important events in the life of any bird. Molt is intimately connected and synchronized with migration and breeding in each particular species. In order to evaluate the extent of molt in Puffinus griseus and P. tenuirostris during the non-breeding season, specimens of both species were collected in the Bering Sea and Gulf of Alaska during the summers (May - August) of 1975 to 1977.

Puffinus griseus and P. tenuirostris molt their flight and tail feathers and most of the body feathers on the wintering grounds in the northern hemisphere. The molt of flight feathers will be correlated with the spring and fall migrations, food distribution, and basic weather patterns. Based on these correlations, the adaptive strategy of this pattern of molting is analyzed. It is advantageous to cross the equator and reach grounds equivalent to those at the breeding areas, to molt in areas of relatively safe weather conditions. This would allow good manoeuvreability in flight and low energy expenditure when molting flight feathers.

Golden Plovers

ASPECTS OF COMMON MURRE BREEDING BIOLOGY

Varoujean, Daniel H., Susan D. Sanders, Michael R. Graybill, and Larry B. Spear. Oregon Institute of Marine Biology, Charleston, OR 97420

A study concerned with, in part, Common Murre (Uria aalge) parental care and chick growth during the at-sea phase of the breeding season was conducted off the central Oregon coast during 1978 and 1979. It was found that: (1) only the male parent accompanies the chick, (2) approximately 60 and 45 days elapsed in 1978 and 1979, respectively, before chick mean body weight reached an asymptote at 90-95% of adult mean body weight, (3) chicks showed an average daily weight gain of 12 g in 1978 and 16 g in 1979, and (4) chicks fledged, i.e. became independent from the parent male, about 25 days after they reach the asymptote in weight. These findings raise new questions regarding parental care in Common Murres.

TIMING AND ENERGY REQUIREMENTS OF EGG SYNTHESIS IN CASSIN'S AUKLET.

L. Astheimer, T. E. Roudybush, and C. R. Grau.
Dept. of Avian Sciences, U.C. Davis, Davis, CA 95616

Methods developed by Grau et. al. (PSG Dec. 1978 abst.) have been used to study the time of yolk deposition in Cassin's Auklets. The present study describes work done on SE Farallon Island in spring 1979. Auklets were fed dye capsules on two occasions: one containing Victoria blue B (VBB),a protein-staining dye; the second, a combination of protein-staining Rhodamine B (RB) and fat staining Sudan Black B (SBB). VBB and RB stain both albumen and yolk; SBB stains yolk. These dyes act as time markers for yolk deposition and albumen synthesis. Our results verify the 8 day period of rapid yolk deposition and the 4-5 day "holding" period reported by Grau et al. It appears that albumen synthesis occurs, in part, after the completion of yolk deposition and up until a day before oviposition. Aureomycin, a Ca-binding antibiotic,was administered to a small sample of auklets. Under UV illumination,aureomycin causes the eggshell to fluoresce. This procedure was tested as a method of identifying eggs from a specific female. Yolk ring volume and the timing of albumen synthesis in '78 and '79 auklet eggs were used to develop a model of daily energy used in egg formation. Eggs of other alcids (murres, puffins and Ancient Murrelets) were analyzed in this manner.

GROWTH OF RHINOCEROS AUKLETS AND TUFTED PUFFINS, TRIANGLE ISLAND, BRITISH COLUMBIA

Vermeer, Kees. 8968 Mainwaring Road, Sidney, British Columbia, Canada

Growth of young Rhinoceros Auklets and Tufted Puffins on Triangle Island, British Columbia varied between species and years. Weight increments of both species were significantly reduced at times of poor reproduction and sub-optimal feeding conditions. An exchange experiment demonstrated that the species could raise each others young and that the exchanged young adopted the diurnal and nocturnal feeding patterns as well as the growth forms of the foster species. The significance of those results is discussed.

NESTING CHRONOLOGY OF THE EASTERN BROWN PELICAN. RALPH W. SCHREIBER, Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, CA 90007, USA. The nesting seasons of the Brown Pelican (Pelecanus occidentalis) throughout its eastern range are summarized and correlated with environmental parameters. Historical records are analyzed and data from weekly censuses of the large colony on Tarpon Key, Pinellas County, Florida west coast (27°40' N, 80°41' W) in 1969 through 1976 form the basis for comparison to less extensive data for other colonies from 1969 through 1979. On Tarpon Key, most egg laying occurs in March and April. However, the nesting season began in December in 1 year, in late January-early February in 3 years, and in late February in 4 years. The season showed a tendency to become progressively earlier in 1971-76, by almost a month. The colony was deserted in October or November and no birds remain at the island during the "non-nesting season," a unique feature of this colony. A colony is Charlotte Harbor, 110 km south of Tarpon Key, has not shown this irregularity with nesting beginning in early March in all years for which data are available. Nesting on Pelican Island on the Florida east coast has shown dramatic seasonal differences with nesting occurring as early as November, while other colonies on that coast are on a late-winter-spring cycle. Nesting in South Carolina is on a "regular" spring cycle. Nesting in the Florida Keys starts in the winter. In more southern parts of the range around the Caribbean Sea, nesting is highly irregular. The time required by adults to undergo molt between breeding seasons, and day length/temperature fluctuations only partially explain the controls on these seasonal patterns of nesting. Other factors are examined and the available data permit interpretation of the nesting seasons of this coastal marine, subtropical species as related to the ultimate and proximate controls on breeding in birds.

COLONY ATTENDANCE PATTERNS AND WING CHARACTERISTICS OF SOME TROPICAL SEABIRDS

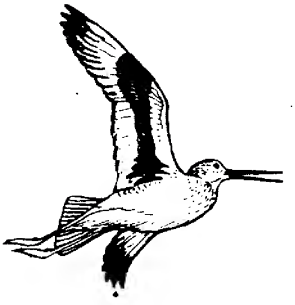
Knudtson, Eric and Maura Naughton. U. S. Fish and Wildlife Service, Honolulu, Hawaii 96850

The length of incubation shifts, frequency of chick feedings, wing loading, and wing shape of 16 species of seabirds were measured on Laysan Island, Hawaii from March to August 1979. The length of incubation shifts ranged from 11 h for the Brown Booby to over 350 h for the Laysan Albatross. Chick feeding frequencies varied from 0.8 feed per day by the Black-footed Albatross to 7.0 feeds per day by the White Tern. Wing loading and wing shape comparisons are made within families. Inferences are made about the relative distances from the island at which species feed.

SOCIAL ORGANIZATION IN A BREEDING POPULATION OF EASTERN WILLETS

Howe, Marshall A. Migratory Bird and Habitat Research Laboratory, U. S. Fish and Wildlife Service, Laurel, MD 20811

A segment of a continuous population of Eastern Willets in the Virginia coastal salt marshes was studied over three breeding seasons. 170 breeding adults were color-marked. Most nests were located each year. Nest density was much higher than that reported for any other shorebird species yet studied. Spacing of nests was achieved through aggressive defense typical of territorial species. Both sexes participated in defense. Feeding and loafing sites were usually disjunct from the nesting area and were also defended aganist conspecifics. Both members of pairs foraged in the same areas. Some pairs defended more than one such site and some sites were used by different individuals at different times. Individuals showed a high degree of fidelity to both nesting and feeding areas from year to year. Broods tended to cluster around highly productive temporary ponds in the high marsh zone. Certain behavioral elements of these Willets were more typical of those expected in colonial species. The overall pattern of social organization is viewed as lying intermediate along a territorial-colonial continuum, combining some of the benefits generally associated with each extreme.



Willet

NESTING SUCCESS IN ATLANTIC COAST BLACK-CROWNED NIGHT HERONS

Custer, Thomas W. Patuxent Wildlife Research Center, Laurel, MD 20811

Reproductive success of black-crowned night herons was monitored in five Atlantic coast colonies. Two of the 5 colonies were located in North Carolina where environmental contaminants in eggs are relatively low. The remaining 3 colonies were located in Rhode Island and Massachusetts where contaminants in eggs are among the highest along the Atlantic coast. Hatching success of eggs and survival of young to 15 days of age were high in all colonies and no differences were detected among colonies. These data suggest that environmental contaminants are not affecting reproductive success of black-crowned night herons nesting in colonies along the Atlantic coast.

WATCHING AND SCIENTIFIC RESEARCH OF THE SEABIRDS IN ISLA RASA, BAJA CALIFORNIA. 1979 SEASON

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Isla Rasa which lies 60 km. east of Bahia de Los Angeles, at $28^{o}48'$ N and $112^{o}59'$ W is a Migratory Seabird Sanctuary by presidential decree since May 20, 1964.

Three species of the Family Laridae, Larus heermani (Cassini, 1852), Sterna maxima maxima (Boddaert, 1783), (Philippi and Landbech, 1861) and Sterna elegans (Gambel) constitute most of the population that nests and breeds on this island of an area of barely 47 hectares. It has a general low relief with topographic accidents among which the most relevant are valleys of different dimensions and rock piles, the highest of which is only 33 m above sea level.

On the island the fanerogamic vegetation is scarce. The existing one is xerophytic, similar to the one of the Peninsula of Baja California and the continent.

The configuration of its relief, the scarce fanerogamic vegetation, the permanent absence of vertebrate predators (except for the rat and the house mouse, recently introduced, and man), as well as the solar radiation and its minimal cloudiness, make of the island the adequate place for the nesting and breeding of the Heerman's Gulls and the Terns, whose species have been mentioned.

In the sixties the massive extraction of eggs, practiced for many years with commercial means, reduced the size of the populations, taking them to a point of vulnerability. Their number was reduced to some thousands and would have reached extinction had not the island been declared a sanctuary.

Even when egg-stealing is not rare, especially if there is nobody to protect the colonies at the proper time, it is evident that the number of animals that congregate there during the breeding season has reached its former level.

With an active participation of the Instituto de Biologia of the National University of Mexico in the conservation and scientific research of our renewable natural resources and cooperating with the Direccion General de Fauna Silvestre SARH (Mexican Wildlife Service), the estimated population of seabirds has reached the number of 810,000. This offers an attraction of unique beauty for the visitors, who properly informed, and guided, give to the Isla Rasa the same significance as to the Galapagos.

FISHERY-SEABIRD INTERACTIONS: A SIMULATION OF TROPHIC EFFECTS

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Fishery management commonly assumes that maximum sustainable yield (MSY) occurs when fish abundance is reduced to one-half its pre-exploitation level. Seabird reproductive success is sensitive to forage availability and may be profoundly affected by such a reduction. A hypothetical seabird life table is constructed, wherein reproduction success is assumed to decrease sharply when forage falls below a threshold level of forage availability. Forage abundance is assumed to fluctuate naturally, with the mean level being determined by fishing pressure. Average seabird population sizes may not appear to be affected by light fisheries, but collapse of some seabird populations is likely as fish abundance approaches or falls below levels assumed to produce MSY. Prediction of fishery effects on a particular bird population is difficult and would require detailed knowledge of life strategy parameters and fishery dynamics.

A CLOSER LOOK AT A NEGLECTED RESOURCE

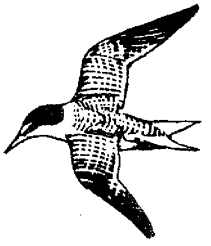
Spear, Larry. Pt. Reyes Bird Obs., 4990 Shoreline Hwy., Stinson Beach CA 94970

Refuse and its use by populations of large gulls will be discussed with emphasis on the 25-30,000 Western Gulls breeding on S.E. Farallon Id., near San Francisco. During the 1979 breeding season few FWG adults foraged at S.F. Bay Area dumps, approx. 90% utilizing nat. sources. In late summer FWG's composed approx. 25% of all large gulls censused between Crescent City, CA and the Columbia River, 80% between Ft. Bragg and Monterey, and 30% between Morro Bay and Santa Barbara. Most returned to the S.F. Bay Area in late Fall. Band re-reading rates at S.F. Bay Area dumps indicates that approx. 50% of FWG adults foraged on refuse during Winter-Spring of 1978-1979. Even so, the S.F. Bay Area FWG composition decreased to 40% due to an influx of other large gulls. Although many gull populations are increasing, winter food limits YY survivorship and determines the breeding condition of adults, thus limiting population growth and size, if food drops below a critical level. Many California dumps are closing. Although some populations of large gulls are creating problems, the FWG, viewed as a potential problem, emerges under favorable light. In fact, as consumers of refuse they provide a means of distributing tons of nutrients over the sea, much of which would be lost otherwise.

UPWELLING AND SEABIRDS IN THE GULF OF CALIFORNIA

Siegel-Causey, Douglas. Department of Ecology, University of Arizona

The Gulf of California is uniquely different from any other region of the Pacific Basin. Seasonal wind shifts, irregular bottom topography, and complex current patterns produce seasonal upwelling: along the Baja coast in winter, the Sonoran coast in summer. However, upwelling does not always cause increased production in the Gulf. Instead, constant regions of year-round productivity regions exist. The phytoplankton, zooplankton, and nekton of these productive regions are very diverse, which may indicate a stability not otherwise expected. This localized upwelling and complex production community is found nowhere else in the Pacific, and will affect foraging patterns and colony location of many seabird species.



Least Tern

SEABIRD COLONIES ALONG THE CALIFORNIA COAST

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An overview of the seabird colonies along the California Coast is given. Information is from a 1979 U.S. Fish & Wildlife Service census of the California Coast from Point Conception to the Oregon border and from other published and unpublished sources.

The 1979 U.S.F.W.S. survey from point Conception to the Oregon boarder is intended to be a base of information for monitoring population changes and for assessing critical habitat for seabirds. Previous to this survey, surprizingly little information was available for a large part of the California Coast. Higher population estimates in 1979 may, but do not necessarily, indicate an increasing population of seabirds in recent years. Many factors could account for the differences. The year of 1979 was a highly productive year and more seabirds may have attempted to breed than in other years. Also, surveying effort in 1979 was more intensive and comparson with previous survey information is difficult.

Censusing over sereral years is needed in order to account for variation in colony site selection and nesting effort as well as to monitor populations. A yearly aerial survey could do much at low cost to increase are understanding of Common Murres and Brandt's Cormorants. Further work, particularly on burrowing species is recommended, but would require a bigger effort.

BREEDING SEABIRDS OF THE WASHINGTON ISLANDS WILDERNESS AND THE INLAND WATERS OF WASHINGTON

Speich, S.M.[1], R.L. Pitman[2], P.M. Gunther[1], U. Wilson[3] and D.A. Manuwal[1]

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[2]Oregon Institute of Marine Biology, Charleston, OR 97420
[3]U.S. Fish and Wildlife Service, Ilwaco, WA 98624

All rocks, reefs, inlets and islands of the Washington Inlands Wilderness (outer coast) and inland marine waters of Washington were surveyed for breeding seabirds during the summers of 1978 and 1979. Observations were made from a Zodiac, small boats, ferries, and aircraft. Aerial photographs of many colonies were obtained during 1979. Diurnal and nocturnal land surveys were made of numerous colonies. All sites were numbered and marked on maps. Nearly all sites were circumnavigated during censusing. Descriptions of most sites were made, including geology, soil condition, habitat and terraine. Both positive and negative data were recorded for all sites, in terms of numbers of each species present. Grid counts of burrowing species were obtained on many islands, and populations projections made. All marine mammals observed were recorded. Comparisons of historical data with present populations were made.

DAILY MOVEMENT OF RHINOCEROS AUKLETS IN NORTHERN PUGET SOUND AND THE STRAIT OF JUAN DE FUCA

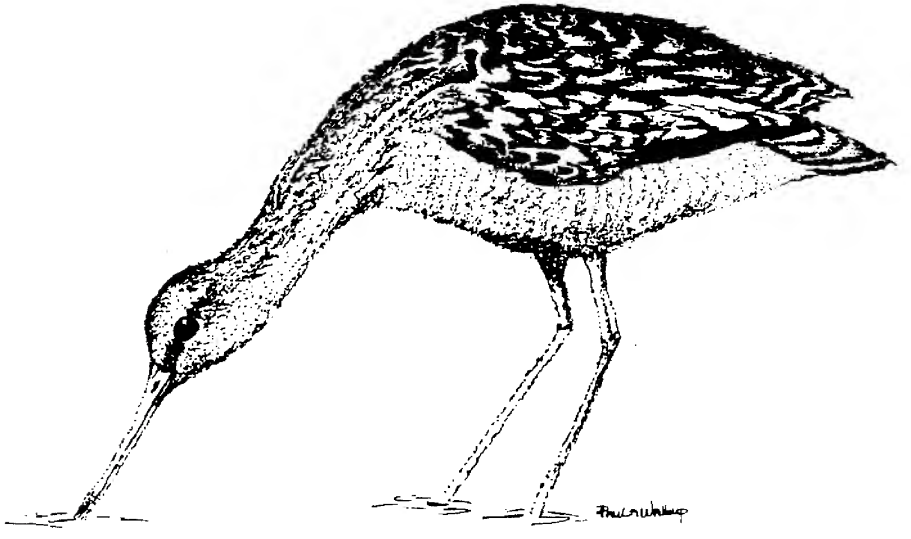
Wahl, T.R., S.M. Speich, and T.S. Miller. Wildlife Science Division, College of Forest Resources, University of Washington, Seattle, WA 98195

The circadian rhythm of Rhinoceros Auklets, to and from feeding areas, was evaluated for the Puget Sound Area. The data were collected during the summers of 1978 and 1979. Censusing methods consisted of from dawn to dusk sea watches, aerial grid transects, ferry boat transects, and small boat surveys. From these data, density and relative distribution of the Rhinoceros Auklets were determined. Approximately 10,000 auklets (30% of the Protection Island Population) were seen feeding and traveling through Admiralty Inlet, moving southeast in the morning and northwest in the evening. Major feeding areas observed were west of Whidbey Island and near Cattle Point, San Juan Island.

OREGON SEABIRD COLONY SURVEY

Varoujean, Daniel H., Robert L. Pitman, and Michael R. Graybill. Oregon Institute of Marine Biology, Charleston, OR 97420

While working for the U.S. Fish and Wildlife Service the authors surveyed, from April to August, 1979, mainland sites and every offshore rock and island in Oregon to determine the status of breeding seabirds. This systematic survey, the first ever for Oregon, established a minimum abundance estimate, for 12 species, of 440,000 seabirds. This figure represents about 35% of the seabirds breeding in Washington, Oregon and California. Over 95% of Oregon's seabirds are of two species, the Leach's Storm-Petrel and the Common Murre. Moreover, the Leach' Storm-Petrel colony on Goat Island and the Common Murre colony on Three Arch Rocks are, for these species, the largest colonies to be found along the coasts of Washington, Oregon and California.



Marbled Godwit

ASSOCIATIONS OF SCOTERS WITH HERRING SPAWN IN NORTHWEST WASHINGTON

Wahl, Terence. Wildlife Science Group, College of Forest Resources, University of Washington, Seattle WA 98195

Distributional studies of marine birds in 1978-79 indicated large concentrations of scoters, primarily Surf Scoters, feeding on herring spawn. Survey flights in spring 1979 showed regional scoter concentrations to be closely related to immediately previous herring spawn activity. Washington's most important herring spawn and associated seabird use is in an area where oil transportation and refining exists and where more intensive industrial development is proposed.

WINTERING DIVING DUCKS IN PUGET SOUND, AND THE STRAIT OF JUAN DE FUCA

Hirsch, K.V. Wildlife Science, College of Forest Resources, University of Washington, Seattle, WA 98195

Aerial surveys, boat surveys and ground observations of birds in Puget Sound and the Strait of Juan de Fuca were conducted between January 1978 and December 1979. Data concerning wintering duck populations were summarized for the months of January 1978 - March 1978, and October 1978 - March 1979.

Bird densities were higher along shorelines, and most ducks were seen within 1 km of shore. Large concentrations of birds occurred in the shallow waters and bays of Dungeness Spit, Jamestown, Discovery Bay, and Padilla Bay. Surf Scoters (Melanitta perspicillata), White-winged Scoters (Melanitta deglandi), Bufflehead (Bucephala albeola), Common Goldeneye (Bucephala clangula), Barrow's Goldeneye (Bucephala islandica), Black Scoters (Oidemia nigra), and Oldsquaw (Clangula hyemalis), made up the wintering populations. Total projected numbers were summarized monthly for each species. Scoters were present throughout the winter months, Goldeneye, Bufflehead and Oldsquaw appeared in November and remained through April. Habitat use was studied, and we found that species were segregated by shoreline type, depth, and distance from shore.

RANKING ALASKA'S SEABIRD COLONIES: A CONCEPT PLAN FOR HABITAT PROTECTION

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Using the inventory data contained in the Catalog of Alaskan Seabird Colonies, a "Colony Score" was calculated for each of the major colonies. This score provides an objective, quantitative method by which Alaska's diverse colonies can be compared and ranked according to relative biological values. It incorporates such factors as (1) the Alaskan distribution and abundance of individual species within the colony, (2) the absolute abundance of individual species within the colony, (3) species diversity, and (4) colony size.

This information was incorporated into a concept plan for the protection of nesting habitat of seabirds. The concept plan identifies 70 colonies or colony complexes having a total population of 21.6 million birds (or 96% of the known Alaska population) deserving some form of protection. Protection of these colonies would help insure the continued existence of Alaska's seabird population at or near present levels. Variations of this ranking system could be useful for developing sound resource management strategies throughout the coastal portions of western North America.

SEASONAL DISTRIBUTION AND HABITAT UTILIZATION OF MARINE BIRDS IN PORT VALDEZ, ALASKA

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Marine bird populations in Port Valdez, Alaska were surveyed in the winter and summer between November, 1977 and September 1979. Approximately 114 kilometers of coastline habitat were described and marine bird use was recorded during 11 surveys. Port Valdez is the site of the Trans-Alaska Pipeline terminus and the primary objective of the surveys was to assess the extent of bird use in an area susceptible to petroleum related development.

An average of 22 species of marine birds was recorded during the winter and 31 species during the summer. The mean number of birds/km of shoreline was 33 in the winter and 44 in the summer. The principal birds present in the winter in order of abundance were goldeneyes (Bucephala spp.), rock sandpipers (Erolia ptilocnemis), common murres (Uria aalge), scoters (Melanitta spp.), buffleheads (Bucephala albeola), and common mergansers (Mergus merganser). Sea ducks averaged over 12 birds/km of shoreline in the winter. In the summer gulls were the most abundant group of birds with dabbling ducks and scoters second and third. Glaucous-winged gulls (Larus glaucescens), black-legged kittiwakes (Rissa tridactyla), arctic terns (Sterna paradisaea) and mallards (Anas platyrhynchos) were the dominant species in the summer.

SUMMER DISTRIBUTION AND ABUNDANCE OF MARINE BIRDS BETWEEN MITROFANIA AND SUTWIK ISLANDS SOUTH OF THE ALASKA PENINSULA

Bailey, Edgar P. U.S. Fish and Wildlife Service, 1011 E. Tudor Rd., Anchorage, Alaska 99503

A reconnaissance of the islands between Mitrofania and Sutwik and roughly 300 km of adjacent coastline on the south side of the Alaska Peninsula was conducted in July 1979. A total of 64,000 pairs of 19 species of seabirds was estimated, not including nocturnal species or Kittlitz's and Marbled Murrelets. Arctic foxes formerly were introduced to several of the islands but since have disappeared. The largest and most diverse seabird populations were on rugged Atkulik and Spitz islands. The remaining islands collectively accounted for only 20% of the survey area's estimated diurnal birds. The Fork-tailed Storm-Petrel is probably the most abundant seabird, judging from the intensity of activity and vocalization. Leach's Petrels were found in comparatively low numbers on only two islands; Ancient Murrelets inhabited five islands. Common Murres were the most abundant diurnal species. Black-legged Kittiwakes were almost as numerous as murres and nested on eight islands. Tufted Puffins and Glaucous-winged Gulls occurred on all but one island. Horned Puffins used 11 islands and were less numerous. Red-faced Cormorants were the most common of the three species present. Kittlitz's and Marbled Murrelets were locally abundant.

MURRES AND PREY PATCHES IN THE BERING SEA

Woodby, Doug. Wildlife Science Group, College of Forest Resources, University of Washington, Seattle, WA 98195

The winter distribution of murres (*Uria* spp.) in the eastern Bering Sea is strongly related to depth contours of shelfbreak. A poor correlation exists between the occurrence of murre flocks and the distribution of dense patches of macroplankton and fish located by echosounding. This suggests that murres can find enough food where prey densities are low and/or that they are not effective at finding rich food patches.

BREEDING DISTRIBUTION AND REPRODUCTIVE BIOLOGY OF MARINE BIRDS OF THE EASTERN BERING SEA

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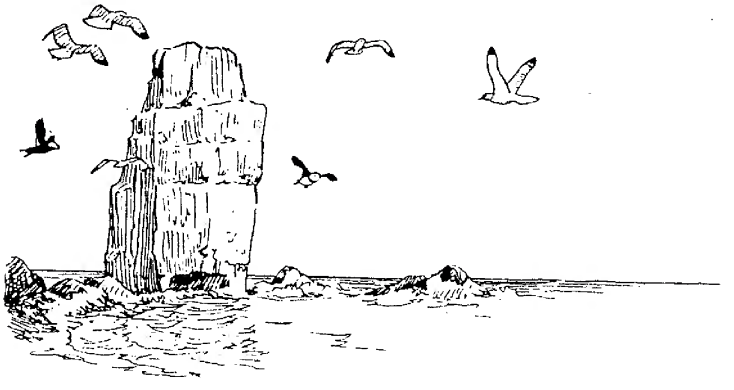
Drury, W. College of the Atlantic, Bar Harbor, Maine 04609

As part of an attempt to synthesize information recently obtained in the Bering Sea, we have summarized the data available on the distribution and breeding biology of seabirds in this region (Sowls et al. 1978, Peterson and Sigman 1977, Dick and Dick 1971, Drury 1977, 1978, 1979, Hunt et al. 1979). Using these data we have drawn broad conclusions about the distribution of breeding species, colony size and the stability of productivity in these colonies. In particular, we find most birds clumped in a few "megacolonies." Cliff-nesting species appear to be limited by habitat while other species appear to be limited by the distribution of preferred foods. There are major differences in the stability of productivity between species and between colonies. These differences may reflect the constancy or unpredictability of the food resources and the variety of prey species available.



Bob Hines

SPRING MIGRATION AT CAPE PRINCE OF WALES, ALASKA

Hubbard, Joel. Dept. of EPO Biology and Flock, Warren, Dept. of Elect. Engineering, Univ. of Colorado, Boulder, CO 80303

During May and early June, 1978, we made visual and radar observations of nearshore migrant seabirds near Wales, Alaska. We sought to determine if observations made on large ACW radars accurately reflect fluctuations in the passage of migrants as determined visually, and also to ascertain whether fluctuations occurred in a predictable pattern. The majority of individuals counted (25,000) belonged to six species: murres, Black-legged Kittiwake, Black Brant, Common Eider and Oldsquaw. Three periods of peak abundance were evident both visually and on radar. In general these were associated with wind shifts to the south; however, substantial increases in the days preceding each period suggests that many migrants anticipated such shifts. Moving north with a following wind would appear energetically advantageous to the migrants; however, migration proceeded to some extent regardless of wind direction, suggesting that migrants must adopt a compromise between energetic considerations and seasonal timing if breeding is to be accomplished in the short summer season.

Loon Abundance and Distribution in the National Petroleum Reserve - Alaska (NPR-A)

King, Rodney J. U. S. Fish and Wildlife Service, Anchorage, Alaska

Three species of loons including yellow-billed (Gavia adamsii), Arctic (G. arctica), and red-throated (G. stellata) were included in aerial and ground surveys during 1977-78 covering 95,000 km^2 of NPR-A. Loons were one of twelve categories of migratory birds surveyed. An estimated mean population of 44,000 in 1977 and 34,000 in 1978 was found throughout NPR-A. G. artica represented 72 per cent of the total population while adamsii and stellata made up 15 per cent and 5 percent respectively. The remaining 8 per cent was recorded as unidentified loons during aerial surveys. Densities of loons are plotted on maps of NPR-A. Density slicing was used to identify high, medium, and low population areas. Average densities ranged from 0.6 - 1.7 loons/km^2 in the 42,000 km^2 of the coastal plains of NPR-A. High densities of more than 1.2 loons/km^2 occurred near Teshekpuk Lake, Meade River, and Icy Cape.

POST-BREEDING MIGRATION OF ARCTIC TERNS IN NORTHWESTERN ALASKA

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The north coast of Alaska and adjacent barrier islands are an important migration corridor for Arctic Terns (Sterna paradisaea) breeding in northern Alaska and possibly northwestern Canada. Extrapolation of the number of terns counted during migration watches in 1976 at Cooper Island, Alaska, 35 km SE of Barrow, revealed that approximately 50,000 terns passed the island during post-breeding migration. Migration occurred from late July to early September, peaking in mid-August. Adult-juvenile ratios decreased throughout migration, from greater than 90% adults in late July and early August, to 60 to 70% adults during peak passage (many still feeding young), and finally to 60 to 80% juveniles in late August and early September. The increased proportion of juveniles during late migration suggests many young birds became independent of parents within one month of fledging, prior to extensive migratory flights. Migration intensity appeared dependent on the availability of patchily concentrated zooplankton species used as prey, which in turn varied, depending upon species, with sea-ice conditions in inshore waters.

ASPECTS OF THE 1977 NORTH ATLANTIC GANNET MIGRATION OVER GEORGES BANK AND ITS ADJACENT SHELF WATERS

Perkins, Eleanor G. Department of Zoology, University of Washington, Seattle, Wa 98195

Sightings of North Atlantic gannets (Morus bassanus) were recorded off Georges Bank and its adjacent shelf waters during Manomet Bird Observatory Seabird Survey cruises in 1977. These data were analyzed to determine spatial, temporal, and age parameters of gannets in their spring and fall migration through the study area.

Appreciable numbers of gannets were observed from late February until early May, with highest counts for the year recorded in late March. Juvenal gannets represented less than 1 per cent of the gannets seen during the early months of the spring migration. The percentage of juvenals increased from 25 per cent early in May to 43 per cent in late May.

The fall migration occurred from late September until the end of November, with peak fall counts recorded early in November. The juvenals are the first to migrate south from the breeding colonies and consequently the majority of this age class passed through the the study area early in October.

Fall migrants headed towards southern wintering grounds were found closer to the coast relative to northbound migrants.

RED PHALAROPE RESPONSES TO THIN OIL FILMS IN FORAGING EXPERIMENTS

Connors, Peter G. and Steve Gelman. Bodega Marine Laboratory, University of California, Bodega Bay, CA 94923.

In experiments using shallow pans of water containing brine shrimp, juvenile Red Phalaropes (Phalaropus fulicarius) were presented with a choice of foraging on pans with a thin surface film of oil or on pans with a clear surface. Results indicate that naive birds were equally likely to enter oiled or clear pans on the first choice. However, subsequent choices favored pans without oil, and the duration of feeding bouts differed: birds remained longer on clear pans than on oiled pans ($p < .01$, Mann-Whitney test). These results suggest that phalaropes can quickly learn to distinguish and to avoid oiled surfaces, but even brief contact with oil at sea may decrease survival.

ORGANOCHLORINE RESIDUES IN EGGS OF ALASKAN SEABIRDS

Ohlendorf, Harry M., Patuxent Wildlife Research Center (PWRC), U. S. Fish and Wildlife Service, Laurel, MD 20811; James C. Bartonek, Northern Prairie Wildlife Research Center (NPWRC), U. S. Fish and Wildlife Service, Jamestown, ND 58401; George J. Divoky, NPWRC; Erwin E. Klass, PWRC; and Alexander J. Krynitsky, PWRC.

We collected 440 clutches of eggs of 19 species of Alaskan seabirds in 1973-76, and analyzed one egg from each clutch for organochlorine residues. DDE was the most commonly detected of 14 organochlorine pollutants (100% of the eggs), PCB's were second (98.9%), and oxychlordane and HCB were about equal in prevalence as the third most common (84.3% and 82.7%). Endrin was found in only one of the eggs, but all other chemicals occurred in at least 22% of the samples. Both frequency of occurrence and concentration of residues in the eggs differed geographically and by species, apparently reflecting non-uniform distribution of organochlorines in the environment and dissimilar feeding habits of the species.

BIRD OIL INDEX: A FACTOR OF VULNERABILITY AND IMPORTANCE

Speich, S.M. and T.R Wahl. Wildlife Science Group, College of Forest Resources, University of Washington, Seattle, WA 98195

During 1978 and 1979 we conducted extensive surveys of the birds of the marine waters of Washington as part of the NOAA Marine Ecosystems Analysis program in Washington. Our objective was to characterize the distribution and abundance of the marine birds and to determine how these might relate to a potential oil spill. To this end we developed the BOI, a factor that is used to transform area projected totals for species into units of importance and vulnerability to oil. This factor for each species considers the health of the population--population size, distribution, reproductive potential--the importance of individuals in our area to the whole of the population during the four seasons, and the vulnerability of the species to oil spilled on the water surface. This system is designed for use anywhere, with components recalculated in each location, i.e., Washington marine waters, Gulf of Alaska, northern California. Adherence to component definitions in recalculating their values allows for inter-site comparisons. Examples of components calculation and factor use are given and discussed.

EFFECTS OF INGESTED PETROLEUM ON REPRODUCTION IN A SEABIRD.

D. G. Ainley[1], C. R. Grau[2], T. E. Roudybush[2] and S. H. Morrell[1]

[1]Point Reyes Bird Observatory, Stinson Beach, CA 94970 and
[2]Dept. of Avian Sciences, Univ. of CA, Davis, CA 95616

A combined field and laboratory study at Southeast Farallon Island and Davis, California, respectively, investigated the effect of ingested oil on reproduction in Cassin's Auklets (Ptychoramphus aleuticus). Three dose levels of bunker C fuel oil and one dose level of Prudhoe Bay crude oil were fed in gelatin capsules to randomly chosen female auklets; control groups were given either an empty capsule or no capsule at all. Each group consisted of 72 to 106 females. Production of eggs hatching and fledging success, and chick growth and survival were compared among the groups. Only egg laying was directly affected. It was inhibited in females that should have laid 9 to 13 days after dosing. The eggs of these females proved to be in the sensitive period of rapid yolk formation when oil was ingested. Such an inhibition of laying would reduce the reproductive success of auklets.

TERATOGENIC EFFECTS OF DDT ON THE AVIAN REPRODUCTIVE SYSTEM

D. Michael FRY and C. Kuehler TOONE, Dept. Avian Science, University of California, Davis 95616

The pesticide o,p'-DDT has been demonstrated to mimic the hormone action of estrogen in mammals. We present evidence that because of this activity o,p'-DDT is a teratogen which feminizes male bird embryos and causes abnormal development of the oviduct of females embryos. This abnormal development results in the laying of soft or thin-shelled eggs when the bird becomes mature. A single dose of o,p'-DDT was injected into the yolk of fertile eggs of California gulls, Japanese quail and chickens. This method was chosen to most closely approximate the DDT contamination of eggs in the wild as this pesticide is fat soluble and becomes concentrated in the yolk of eggs. Fresh egg concentrations of 20-100ppm caused feminization of the testis of males. Japanese quail were hatched from contaminated eggs and raised with control birds to sexual maturity. Females from eggs with 100ppm o,p'-DDT layed soft-shelled eggs or no eggs at all. Females from eggs with 20ppm layed thin or soft-shelled eggs. The study indicates that birds which hatch from o,p'-DDT contaminated eggs show the effects of the pesticide even if they are not exposed to the pesticide after hatching.

RADIOTELEMETRY OF THE BROWN NODDY (ANOUS STOLIDUS) ON MANANA ISLAND (OAHU), HAWAII

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Eleven brown noddies were tracked from 18 June until 7 July 1979 to determine feeding areas, activity patterns, and to develop tracking techniques for a 200 g marine bird. Transmitters were attached to adults in various stages of breeding and all abandoned eggs or young. Tracking occurred from 600-800 foot promontories at Makapuu Point, Diamond Head, and Ulupau Head, utilizing two teams of trackers. Bearings were taken each half hour 24 hours per day. Results indicate that birds departed and arrived at colony from a southern direction. Since tracking distance was limited to 16 km, birds were out of range much of the time making triangulation impossible. Birds departed colony throughout the day, with peaks at 0400-0600 and 1200-1600. Birds arrived back at colony 1600-2400. No movements on or off colony were detected between midnight and 0430. Triangulation was possible with several birds returning at night, giving a preliminary indication that feeding grounds are near Penguin Banks. It is recommended that future work with these goals utilize one tracking station and an airplane.

SANDERLINGS AND BEACH CRUSTACEANS: EXPERIMENTS ON PREY AVAILABILITY

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We investigated the role of prey size, prey depth, prey distribution and substrate penetrability in affecting prey availability to sanderlings. Five experiments were performed in the laboratory manipulating these availability factors and prey density. All factors significantly affected prey risk. Prey risk increased with prey size and decreased with prey depth. Prey close to one another were more likely to be captured. Prey risk also increased in more penetrable substrates. Prey capture rates varied between 0.01 and 0.84 capture per second of search time over a range of prey density between 60 and 1200 prey per m^2. Prey species had no effect on capture rate independent of prey size. Prey risk and prey density together controlled sanderling capture rates, with density having the strongest effect. Measurements in the field around Bodega Bay, California indicate that prey density, prey size, prey depth and substrate penetrability can have significant impact on sanderling foraging under field conditions.

THE BEHAVIOR OF HERRING AND GREAT BLACK-BACKED GULLS IN A MIXED COLONY

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During a three-year study of the behavior and ecology of the Herring Gull in Newfoundland, I observed numerous interactions between Herring and Great Black-backed Gulls in one habitat. Great Black-backed Gulls were dominant in every interaction, and in several instances were able to displace pairs of Herring Gulls from breeding territories. Great Black-backed Gulls inflicted severe injuries upon Herring Gulls during fights, and on at least three occasions Herring Gulls(adults) were apparently killed by Great Black-backed Gulls. Herring Gulls nesting in association with Great Black-backs had many more eggs and chicks disappear then was observed in other habitats. Significant numbers of newly-fledged Herring Gull chicks were killed and eaten by Great Black-backed Gulls. These interactions had marked effects upon the behavior, activity budgets, and frequency of aggressive behavior in Herring Gulls. Interactions between Great Black-backed Gulls, however, were rare, and it appears that this species is not territorial. A hypothesis is suggested to explain this phenomenom.

WINTER TERRITORIALITY IN SANDERLINGS: WHEN AND WHERE TO DEFEND

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Sanderlings frequently defend winter feeding territories along coastal beaches of California. The likelihood of territorial defense fluctuates seasonally and also from place to place. Whether a given site is defended depends upon resource levels and predation risk. Sanderlings defend territories at intermediate levels of food abundance, curtailing defense when resources are scarce or when they are very abundant. This pattern breaks down, however, when raptors hunt along the beach. Under this condition sanderlings stop defending altogether.

FEEDING HABITS OF OSPREYS IN A MARINE HABITAT

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Feeding behavior and food habits of osprey in the Bahia de los Angeles -- Gulf of California (28°57' N., 113°33' W.) were studied during the months of January through June of 1977 and 1978. Food habits were determined by direct observation and by collection of food remains from nests. Osprey were primarily dependent on non-migratory fishes of the families Kyphosidae, Sparidae, Scorpaenidae, and Serranidae. During the latter portion of the breeding season (April to June) increasing numbers of migratory fishes arrived in the warming waters and were captured by ospreys. 68 percent of the captures occured during ebb and low tides. Most were made along shorelines and bay shallows. Hunting methods included primarily low flight over shallow waters and perched surveillance, and some instances of high circling flight over depths. All foraging was solitary; ospreys were never observed to participate in feeding frenzies with other seabirds, possibly due to the frequent attempts at piracy by Western gulls and Heermann's gulls and to the ospreys ability to capture the larger, less concentrated fish species not available to other species of avian piscivores.

DIET OF DOVEKIES IN NORTHERN BAFFIN BAY

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The Dovekie, *Alle alle*, is the most abundant alcid in the North Atlantic, but surprisingly little is known about its diet. This paper presents information on the food habits of Dovekies from the time of their mass arrival in, through to their departure from, northern Baffin Bay (May-Sept.). It includes details on adult/subadult/chick differences in diet, size selection of various prey, and the ecological role of Dovekies in northern marine systems. This paper is based on 381 stomach tracts collected over a three-year period.

PRELIMINARY COMPARATIVE FEEDING ECOLOGY OF THE FAIRY TERN (GYGIS ALBA) AND THE BLACK NODDY (ANOUS TENUIROSTRIS) IN THE NORTHWESTERN HAWAIIAN ISLANDS

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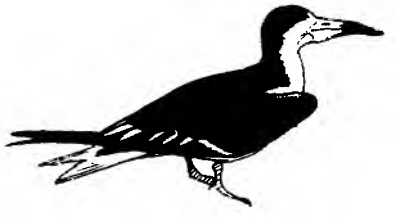
The Fairy Tern and the Black Noddy are 110 - tropical terns which feed primarily inshore. Food samples were obtained by live capture methods and subsequent regurgitation. The Fairy Tern (n=36) had 5.0 prey items/sample, a mean sample volume of 2.8 ml, and a mean prey length of 3.4 cm. Diets analyzed by number, volume, and frequency of occurrence of different food classes indicate that squid (19% by volume) in the family Ommastrephidae and fish (80% by volume) in the families Exocoetidae, Coryphaenidae, and Mullidae are the most important prey items. The Black Noddy (n=105) had 12.3 prey items/sample, a mean sample volume of 4.8 ml, and a mean prey length of 3.5 cm. Diet analysis indicates that squid (7% by volume) and fish (92% by volume) in the families Dussumieridae, Exocoetidae, Mullidae, and Synodontidae were the most important food sources. Both species consume a wide variety of similar sized fish and squid but relatively few Crustacea. Each species seems to be an opportunistic surface feeder and tends to prey on schooling organisms.



Black Skimmer

SHOREBIRD HABITAT AND FOOD UTILIZATION IN ELKHORN SLOUGH, CALIFORNIA

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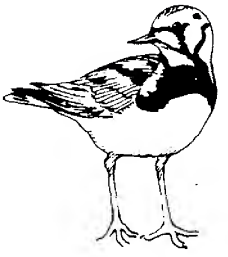
To provide baseline data for California's federal Estuarine Sanctuary and for a Sea Grant-sponsored wetlands management study, 46 censuses were taken from November 1977 through November 1979 in Elkhorn Slough. Over all seasons and habitats, 10 species were consistently abundant, revealing 3 general patterns of shorebird use similar to those reported for Bolinas Lagoon by Page, et al. (1979). Habitat types such as mudflats, salt marshes and ponds were used consistently within species, but use of smaller areas of the slough for feeding varied considerably. Mudflats were used mostly for feeding, salt marshes and ponds for loafing and secondarily for feeding. Feeding habits of 3 consistently abundant species, including 25 Marbled Godwits, 20 Willets, and 105 Western Sandpipers, were analyzed. Both the Willet and Marbled Godwit ate grapsid crabs, with the Marbled Godwit also consuming bivalves and polychaetes. Western Sandpipers ate a larger diversity of prey, including insects, polychaetes, amphipods, ostracods and oligochaetes. A preliminary comparison of prey items in stomach-pumped samples and stomachs from sacrificed birds indicated concurrence in prey species, but not in relative abundance.



Ruddy Turnstone

OPPORTUNISM AND SITE FAITHFULNESS IN WINTERING SANDERLINGS

Myers, J.P. and B.J. McCaffery. Museum of Vertebrate Zoology and Bodega Marine Laboratory, University of California, Berkeley. 94720

Sanderlings show strong site-faithfulness in their choice of wintering grounds from one year to the next. Records of color-marked individuals show that 72% of birds banded as adults and 50% of those banded as juveniles return to the banding site at Bodega Bay during the subsequent winter. This pattern of winter philopatry is complicated, however, by abrupt switches in foraging location not only within Bodega Bay but also to other regional lagoon systems, including Limantour Estero and Abbott's Lagoon on Point Reyes Peninsula. During early fall up to 25% of the Bodega Bay banded sanderlings may be on Point Reyes. These wandering birds then return to Bodega Bay by early winter.

HUMAN DISTURBANCE IN WESTERN GULL (LARUS OCCIDENTALIS LIVENS) COLONIES AND POSSIBLE AMPLIFICATION OF DISTURBANCE BY INTRASPECIFIC PREDATION

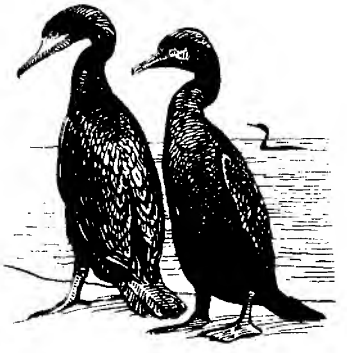
Hand, Judith Latta. Smithsonian Inst., National Zoological Park, Washington, D.C. 20008

There is indirect evidence that human disturbances are having profound affect on reproductive efforts of L. o. livens at several colonies in the Gulf of California. Breeding adults that lose their eggs or chicks apparently practice conspecific predation, even when human are not present, thus augmenting effects of human intrusions. These combined effects could lead to severe decline in numbers, or even pose a threat to the survival of this endemic population, if human disturbance is widespread. Attempts to assess breeding success throughout the Gulf seem warranted and, if necessary, some action to regulate human contact may be essential.

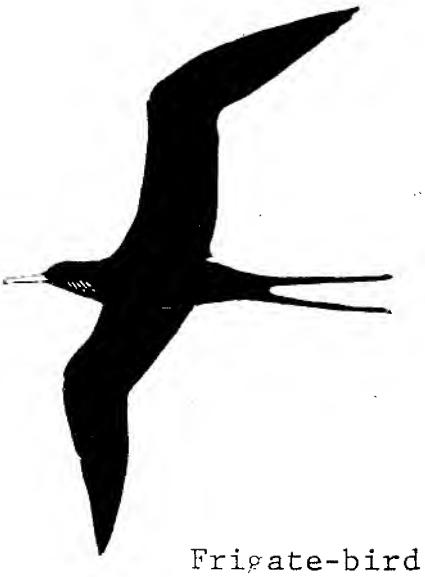
RECONSTRUCTIONS OF THE EXTINCT FLIGHTLESS SEADUCKS OF SOUTHERN CALIFORNIA

Warter, Stuart. Dept. of Biology, Calif. State Univ., Long Beach, Long Beach, CA. 90840.

The extinct flightless seaducks(Chendytes) of the Pleistocene and Holocene coasts and islands of southern California were reported on at length at the Fifth Annual Meeting of the Pacific Seabird Group (PSG Bull. 5(2):89). Reconstructions of these remarkable birds have been completed; they have been depicted in a series of illustrations by wildlife artist Julia Nagata. A series of sketches illustrating representative stages in the evolution of the flightless condition also have been prepared.



COMMITTEE COORDINATORS



Frigate-bird

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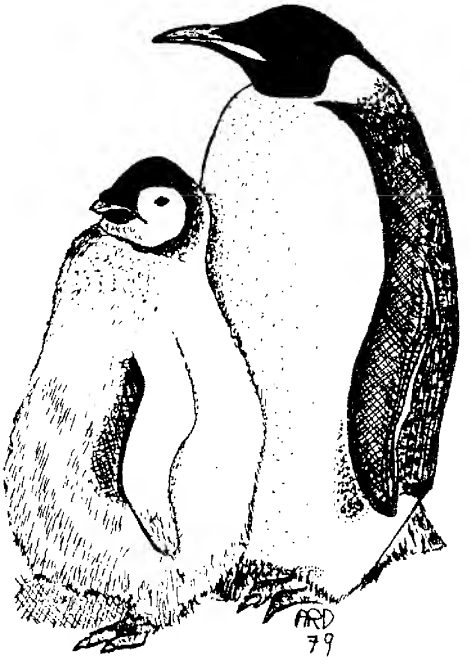

Emperor Penguin